FLIGHT

The AIRCRAFT ENGINEER & AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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The Aircraft Engineer and Airships

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DIARY OF FORTHCOMING EVENTS.

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:

July 7 to 28	Exhibition of Aircraft Paintings by Mr. Geoffrey Watson, at Brook Street Art Gallery, 14, Brook Street, W., in Aid of R.A.F. Memorial Fund
July 17 to 31	Seaplane Contests at Antwerp
July 24 ...	Aerial Derby at Hendon
Aug. 3 ...	Air Ministry Competition (Large and Small Type Aeroplanes)
Aug. 28 & 29	Schneider International Race, Venice
Sept. 1 ...	Air Ministry Competition (Seaplanes)
Sept. ...	International aviation week (with competitions) at Brescia, Italy
Sept. 8, 9 and 10	Fédération Aéronautique Internationale Conference, Geneva
Sept. 27 to Oct. 2	Gordon-Bennett Aviation Cup, France
Oct. 23 ...	Gordon-Bennett Balloon Race, Indianapolis, U.S.A.

EDITORIAL COMMENT

IN many ways the sixth Aero Show, which closed its doors to the public on Tuesday, constitutes a landmark in the history of British aviation. Not only was it the first to be held since the end of the Great War, but it possessed an historical interest which no other exhibition of the kind ever has in the past, or can in the future. It demonstrated six years of progress such as can never be made in any like period, unless, which Heaven forbid, it be under the impetus of a similar upheaval to the last. Indeed, it is doubtful if even another great war could bring in its train so much of real progress as the last, because in 1914 men were still groping more or less in the dark for the solution of what we may call fundamental problems, which the early days of the War brought and made the rest simply a matter of developing their logical consequences. Progress there would undoubtedly be. Progress has even been made in more than one direction already under the influence of peace requirements, but it would be too much to expect as much as was gained under the intensive requirements of war. The fact is that the gap between the Show of 1913 and that of 1920 is not to be measured in terms of time elapsed, and to imagine that any tale of progress of a corresponding nature will be found in 1927 would be to invite disappointment. Therefore, as we say, the late exhibition possessed qualities of interest which were all its own and will never be rivalled.

The Aero Show

That being so, we cannot but regret that the public interest taken in the Show fell far short of anticipations. We were frankly of opinion that people would flock to see it in their thousands. During the War the public imagination was captured by the Flying Service to a far greater extent than by any other arm of the fighting forces of the Crown. It was new, for one thing, and that which is new appeals with greater force than that which has become familiar by use. Then, it grew to enormous dimensions, and there was scarcely a family in the land which had not at least one member serving in its ranks. Also, it was the one branch of fighting activity which was brought forcibly home to the

population through the enemy's aerial attacks on this country. One way and another, therefore, we had expected that the Show would have been far more appealing to the popular imagination than it turned out to be.

Why it fell short in the matter of attendances we do not pretend to know. Certainly it was not because of any failure of the Press of the country to do it justice. Every class of journal devoted considerable space to the Show and its lessons. The promoting Society advertised it well. Yet the fact remains that there was something lacking. In future years it will be as well if those who are responsible for its conduct will carefully enquire into the reasons and, if they are discoverable, set them right. There is the Motor Show to take as a standard. If that, which is devoted to what has become, after all, a commonplace of everyday life, can attract its hundreds of thousands, surely such an exhibition as the Aero Show should not fall far short if the proper means of publicity are used.

* * *

The First Hundred

It was a moving affair, that dinner to the survivors of the first hundred pioneer pilots of flight, which took place during the currency of the Show. There are still left with us 73 of the first hundred British aviators, and of these 48 and many other pioneers were gathered together to pay homage to the past. There are no words in which to described the emotions of those who were present to do honour to those, too many of whom have given their lives for the cause of aviation, who, in the early days when men first made practical journeys in the air, risked everything to bring the science to that state in which it would be of real value to civilisation, by girdling the earth with a network of speedy communications which would bring peoples together and make for the lasting peace of the world. To our contemporary, *Aeronautics*, to whom the inception of the idea must be credited, the most grateful thanks of those who ultimately became associated with the gathering are due. Especially to be appreciated is the manner in which our contemporary willingly stood down and relinquished the organisation into other hands when it became obvious that the universal interest was too great to allow of its remaining, so to say, sectional.

We intend to do no more than make a passing reference to the function itself, which is fully reported in another part of this issue of FLIGHT. One thing, however, we cannot allow to pass without correction, Mr. H. G. Wells, who has made for himself a name as a prophet, ventured again into the realms of prediction and showed himself to be just a little pessimistic regarding the future. We think he based his pessimism on false premises. He detailed the various disabilities which he alleges attach to international flying, and drew a moving picture of the unfortunate traveller by air who, intending to take a long journey across several countries, is compelled to descend within each frontier, and is delayed many hours at each stopping place while he, his machine, and his baggage are searched for contraband. The sovereign states of Europe, he thought, were too small for modern aerial transport, and the situation had become intolerable.

It is unfortunate for Mr. Wells' argument that nothing of the sort does or is likely to happen. All that kind of thing is provided against by the Air Convention, which lays down that free transit shall be accorded to the machines of each of the subscribing countries when passed over the territory of the others. For instance, the machine bound for Italy need not descend in France at all—it can pass over the frontiers at will, provided it conforms to the regulations and bears the proper identification marks as prescribed by the Convention. The beginning and end of the Convention is to eliminate all the vexations and delays which would be inevitable without its agreements, and to ensure, in turn, that the hospitality of the air is not abused. If Mr. Wells has nothing more cogent to advance as a reason why aviation is not likely to prove of value to the commercial and travelling world we are certainly not inclined to view the future with alarm.

* * *

An Air Line to Glasgow

It has now been officially announced that Messrs. Beardmore and Co. intend almost immediately to inaugurate an aeroplane service between London and Glasgow. The first services will be in the nature of a test of the air-traffic conditions on such a 400-miles' route, and the intention is to employ biplanes of the Beardmore type, which are capable of maintaining an all-weather speed of about 100 miles an hour. Allowing for a short stop at Brough, it is intended that the full journey shall occupy about five hours, against the average time by train of nearly ten hours. The fares for passenger traffic have not as yet been definitely fixed, but it is thought they will be about fifteen guineas for the journey.

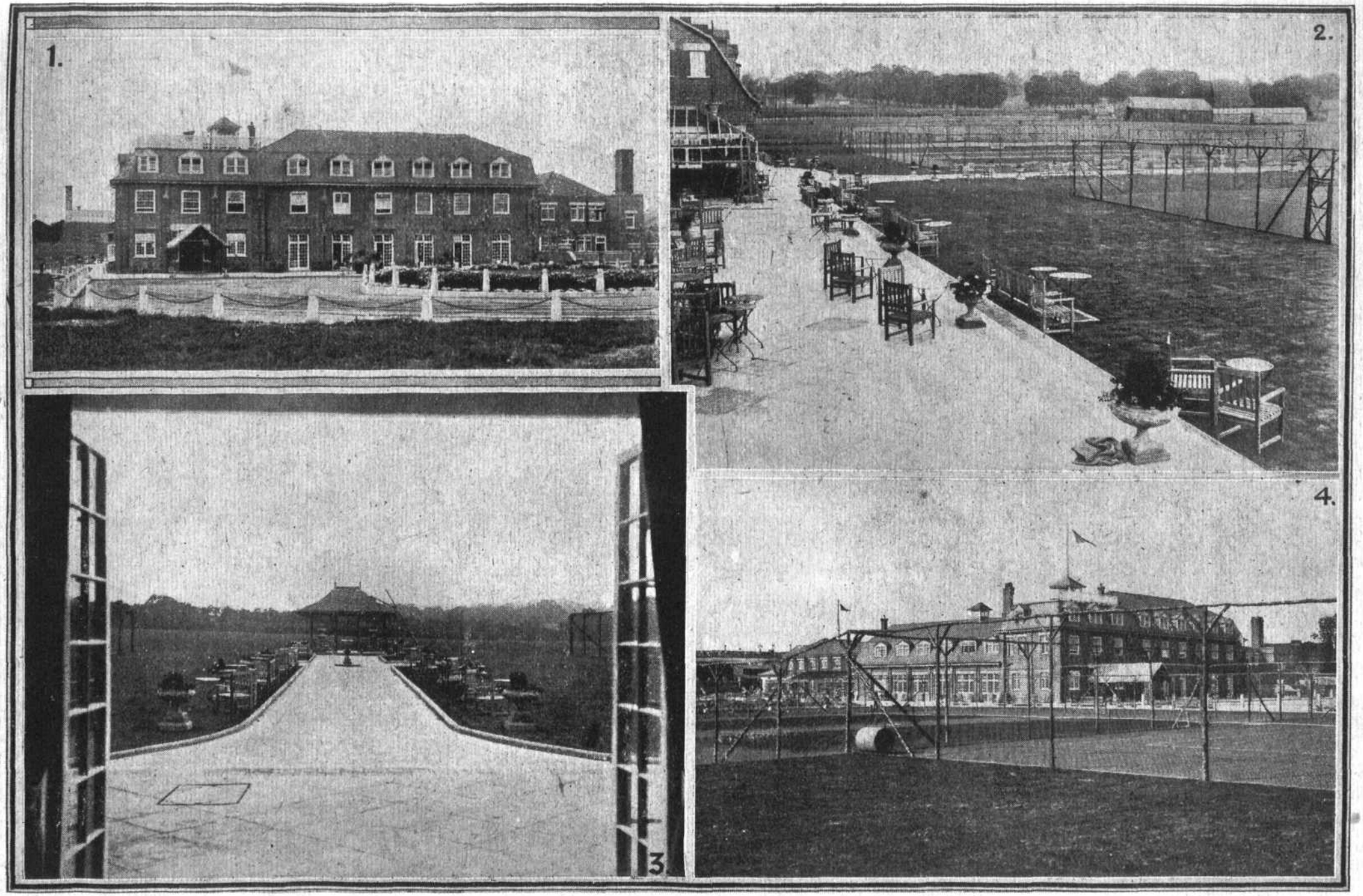
Such a service must of necessity depend for financial success in its early days on a certain measure of support from the Post Office. That is to say, it must be given as much mail matter as possible to carry, so that regular loads can be assured. Up till quite recently we should have been inclined to view the possibility of postal support with scepticism, but there have been signs lately that the Post Office is becoming alive to the value of aerial transit. Therefore, we regard it as an assured possibility that the new London-Glasgow service will at least receive favourable consideration at the hands of the authorities. But there must be none of the half-a-crown per letter nonsense about it. It has been shown by figures which are beyond dispute that it is possible to carry first-class mail matter at ordinary postal rates and still to pay expenses, and in fact to show a profit. The business community does not, however, desire that the Post Office should risk making a loss through enterprise directed towards the provision of quicker commercial communications. It is prepared to pay for facilities, but not through the nose as it has had to do to take advantage of the London-Paris service.

We welcome the news of the institution of this new service and wish every success to its promoters.

* * *

The Aerial Derby

On Saturday the race for the "Aerial Derby" will, under the auspices of the Royal Aero Club, take place, over practically the same routes as last year. This race has become almost as much of a classic as the great race from which it takes its name. Nothing that Lord Northcliffe has done for aviation—and he has done a great deal—has been of greater value to the movement than its conception. The London-Manchester race and the Atlantic flight



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THE LONDON FLYING CLUB, HENDON, ADJOINING THE HENDON AERODROME WHERE THE AERIAL DERBY STARTS AND FINISHES: A view of the Club-house, the terrace facing the Club aerodrome, the "gangway" to the aerodrome pavilion between the hard tennis courts, as seen from one of the windows of the Salon, and the hard tennis courts. Members of the Royal Aero Club are honorary members of the L.F.C. for Aerial Derby Day.

were perhaps infinitely more spectacular, and appealed with more force to the popular imagination, but they did not possess the direct appeal to the man in the street which is made by the Aerial Derby. This is an age of propaganda. Nothing, from the Government to a patent medicine, can exist without advertisement. There is advertisement and advertisement. There is one kind which fails because it is badly conceived and as badly carried out. There is another which fails because its appeal is too ephemeral and is limited as well. For example, we would say that the two flights we have named were good propaganda at the time. They attracted an enormous amount of momentary attention, but it was evanescent because in the one case, perhaps, a few thousands actually saw the race, while the rest of the population had to take it on trust. In the other, nobody was privileged to witness the Atlantic flight and so all had to rest content with what they were told. The Aerial Derby is in a different class. Literally millions of people actually see the race. They talk about it for days beforehand and for days afterwards, and thus a lasting impression of the safety and speed of flight is left on their minds, and perhaps foremost of all there is the ever-present sporting element to encourage. There is no finer propaganda than this, and of all the aerial events which are held during the year we regard the Derby as being easily first in point of advertising value to the movement.

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The Aeroplane and the Law

The first recorded case of escape by air from the law seems to be that of a man who, much wanted by the authorities, and knowing that all the other outlets from the country were watched, hired a special machine at Croydon to fly him to Paris. His up-to-dateness seems to have stood him in good stead, for since his arrival in Paris nothing appears to have been heard of him. It seems strange that the authorities did not apparently think of the possibilities of the aeroplane as an aid to eluding justice, since it was not until 24 hours after the man had left the Croydon aerodrome that they bethought themselves to go there and enquire if anything had been seen of the wanted man. By then it was too late, and the bird had actually and literally flown.

The fact that the modern wrong-doer realises the value of the aeroplane in his task of eluding the police need give rise to no uneasiness. The authorities have had their lesson, and as there is no easier place to watch than an air port, it is highly probable that the risks will be so great that the fleer from justice will elect to seek other avenues of escape. The incident just recorded is principally of interest in that it is, so far as we know, the first of its kind.

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Aerial "Nuisances"

In a long letter to *The Times*, Sir W. Joynson-Hicks proposes an extension of the provisions of Section 9 of the Air Navigation Bill. As it now stands this section reads: "No action shall lie in respect of trespass or in respect of nuisance by reason only of the flight of aircraft over any property or the ordinary incidents of such flight." Sir William points out that if this section is passed as it stands, the result will be that the Courts, placing a strict legal construction upon the word "nuisance," will hold that all right of action and remedy is excluded, although the plaintiff in the case is able to prove that the result of the flight of aircraft over his house causes a serious and material diminution of the ordinary comfort of life. It is, he thinks, quite unnecessary that such immunity should be conferred on aircraft. Aviation is quite capable of being carried on without causing what in law is a "nuisance." But if complete immunity from liability for "nuisance" is conferred upon every person who uses an aircraft, it is obvious that an inducement to use aircraft properly will be taken away. He proposes, therefore, that the clause should be amended to read as follows: "No action shall lie in respect of trespass by reason only of the flight of aircraft making a mere passage over any property or of the ordinary incidents of such flight so long as the provisions of this Act and any order made thereunder and of the convention are duly complied with; but where any material damage or loss or any nuisance is caused" (etc., etc., as the proposed section now stands).

We quite follow the argument and agree with the proposed amendment. With the clause as it now stands, to take an extreme case, the user of an aircraft would be able to destroy the amenities by making a daily practice of looping the loop for hours on end over a particular house or village, and there would be no remedy in law. Obviously, that cannot be permitted. Not that we imagine anyone would want to take advantage of such a loophole in the law, but in these matters it is just as well to take no risks.

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Siege Breaking by Aeroplanes

IT was officially announced on July 16, that the garrison at Rumeita, the centre of the disorder on the Lower Euphrates, is being provisioned by aeroplanes. Our aeroplanes have also been active in bombing and machine-gunning hostile villages and tribal concentrations.

Destruction of German Material

A MESSAGE from Friedrichshafen, under date July 13, to *L'Auto.*, states that the Allies' destructions commission had visited 22 works producing aircraft material, during the previous few days, notably the Manzell aeroplane works, at Seemoos, the Maybach works at Friedrichshafen, and the Mercédès works at Unterturckheim. The destroying of material is said to have been commenced.

German Types Approved

FROM news received in France it would appear that the Allied Commission of Control have permitted the following types of aeroplanes to be used for traffic: Junker, Fokker and Sablating limousines and the Sablating monoplane.

The "L.72" in France

As in London, so in Paris, a demand has arisen for a sight of the captured Zeppelin, and the French authorities have decided that when the shed at Cuers, where the "L.72" is to be permanently stationed, is ready, the airship will cruise over Paris on her way from Maubeuge. The French Minister of Marine and M. Flandin, Under-Secretary of State for Aviation, visited Maubeuge on July 15 to inspect the airship, which is similar to the "L.71" delivered to England. The dimensions of the "L.72" are: Capacity, 69,000 cubic m., length 226 m., diameter 24 m., total height 28 m. The airship has six *nacelles*, two axial and four lateral, each containing a 260 h.p. motor. Useful load 41 tons, maximum speed 120-125 kiloms. per hour, radius of action about 18,000 kiloms.

U.S. Navy Loses a Dirigible

WORD comes from Akron O. that the dirigible D1, belonging to the United States Navy, and two privately-owned balloons were destroyed in their hangar by fire on July 19. The loss is estimated at 160,000 dollars (nominally £32,000).

Lieut. Roget at Athens

COMPLETING another stage of his flight round Europe Lieut. Roget arrived at Athens on July 17.

FLIGHT
AIRCRAFT ENGINEER

The OLYMPIA 1920 AERO SHOW

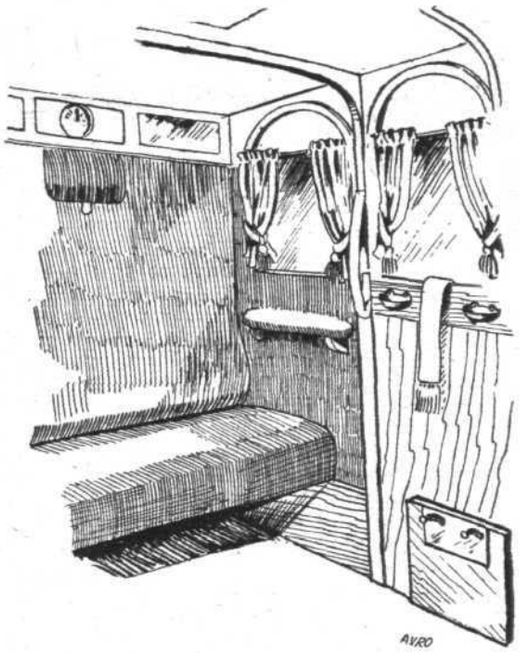
(*Concluded from page* 761)

Still Waiting

It would appear that for an international aero exhibition—or competition for that matter—the only reliable way for foreign exhibitors or competitors to get their machines to the place in time is to fly them there. At the Paris Aero Show many of the foreign exhibitors were unable to get their machines to the show in time for the opening, while others were actually more than a week late. At Monaco this was more or less repeated, and it was the firms who had their machines flown to the scene of the competition who avoided transport difficulties. The present Olympia show is no exception. The only foreign aeroplane exhibitor, M. Henri Potez, is, at the time of writing, still waiting for his machine, and the only exhibit on this stand is a placard announcing that "The machine is actually delayed in transport and is incessantly expected." We extend our sympathy to M. Potez, so much more so as he is the only foreign constructor who has, by entering a machine for the show, expressed his willingness to match his products against those of British constructors.

The Avros

Of the three machines exhibited probably that which attracts greatest attention is the triplane, type 547A. This machine, which has the great advantage, from a commercial point of view, that it is built of standard Avro parts, and that, therefore, replacements are facilitated, has a very comfortable cabin. In fact we are inclined to think that, from the point of comfort, it is the best cabin in the show. Not only is the upholstery excellent, but there is plenty of leg and elbow room. The cabin is entered through a door in the starboard side, and on the port side there is a dummy door which helps to retain the symmetry and gives the impression of a first-class railway carriage. The windows in the door and dummy are of the raising type, further adding to the similarity to a railway compartment. The four passengers sit facing one another, two side by side on each seat. As already mentioned, there is plenty of room for legs and elbows, and the seats



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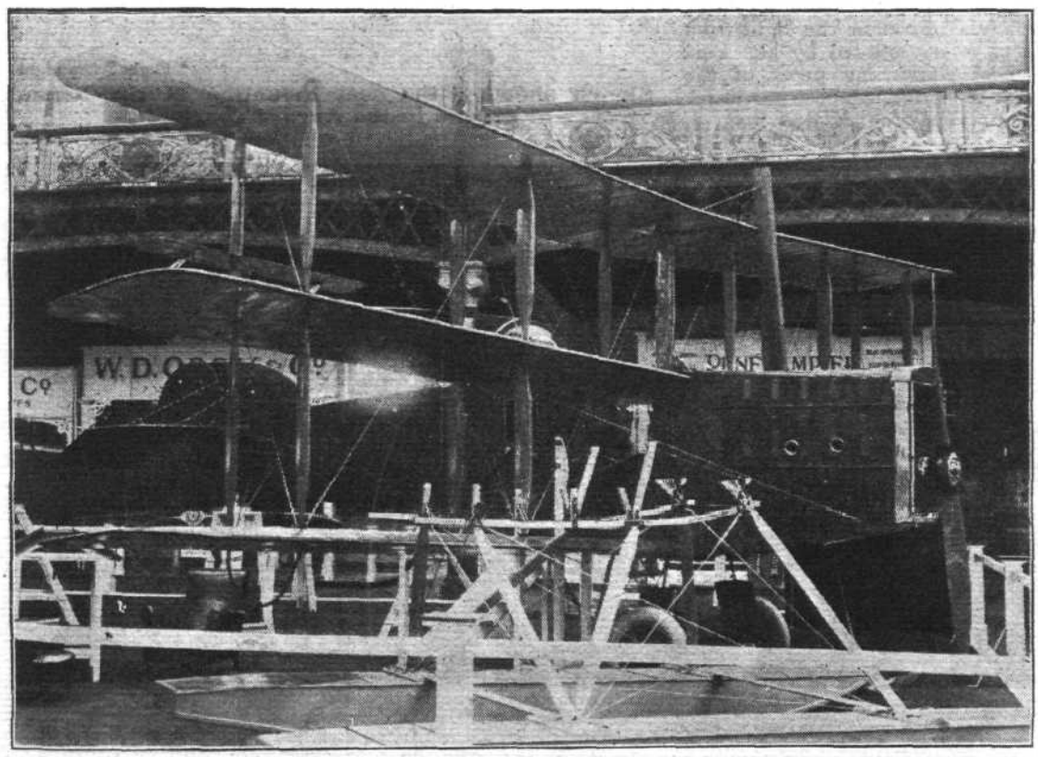
View inside the cabin of the Avro triplane: Near the bottom of the dummy door on the port side are seen the hot and cold air regulators, while in the upholstered back-rest is indicated the little hinged flap which allows of communication with the pilot



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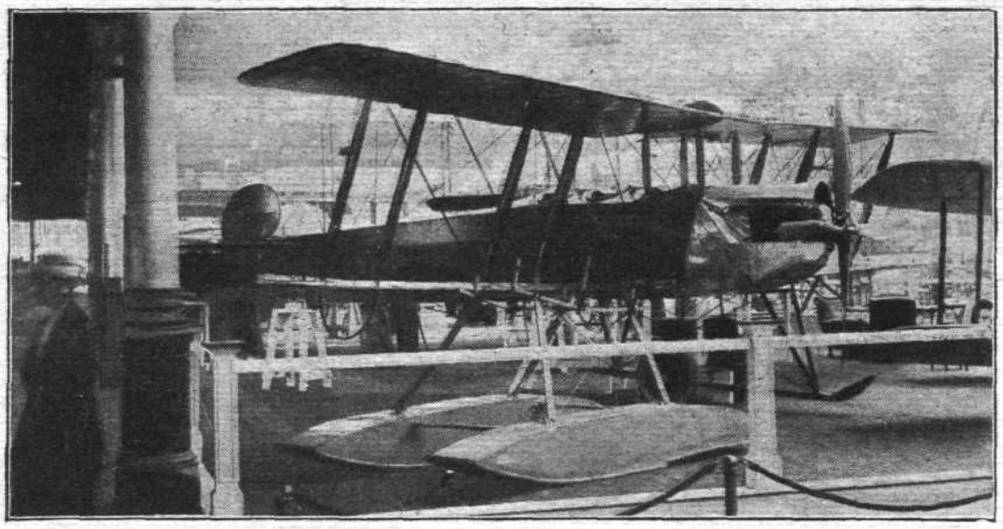
The Avro Commercial Triplane at Olympia: This machine has a very comfortable cabin seating four passengers



The Avro Tourist at Olympia : The mounting of the Renault engine is very neatly carried out

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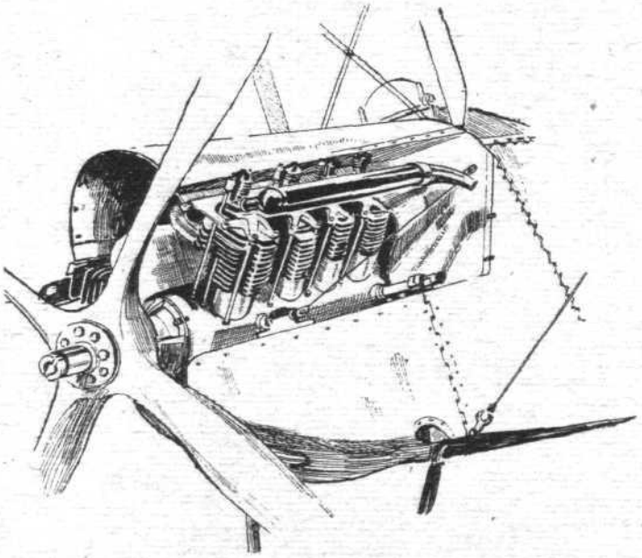
are extremely comfortable, so much so that a show-weary visitor was seen taking a nap in the quiet of the cabin. One hopes that he had pleasant dreams of long-distance flights over exquisite scenery. The ventilation of the cabin has been very well looked after. Not only are there circular ventilators of the ordinary type in the roof of the cabin, but there is also a sliding panel which can be opened either to admit fresh air or to allow one of the passengers to put his head outside and—have a look round! At the foot of the dummy door on the port side there is a further heating and ventilating arrangement with two levers operating hot and cold air admission to the cabin. Either can be on or off. A little flap door in the upholstery of the aft seat enables the passengers to see and speak to the pilot, who is seated aft of and slightly higher than the aft bulkhead. Two lights in the roof of the cabin allow the passengers to read if the weather be very dull or during a night flight. A refinement which is not usually found, but which is extremely useful, is the provision in the cabin of two instruments: an altimeter and an air speed indicator. By means of these the passengers can keep themselves informed of what is going on, or as much as is of interest to them. As the speed is, of course, the air speed, one can imagine passengers having little bets on the probable duration of the journey, much as do passengers on a liner.

The Avro Baby, which has already been fully described in FLIGHT (June 26, 1919) has to its credit some very fine performances, chief among which is, of course, the flight from London to Turin non-stop in 9½ hours, piloted by Mr. Bert Hinkler. This furnishes a most convincing proof of the utility of a small machine, this flight having been made for a fuel expenditure of 20 gallons of petrol, or well over 30 miles to the gallon. This opens up vast possibilities of cheap aerial touring in the future, and proves that very high-power



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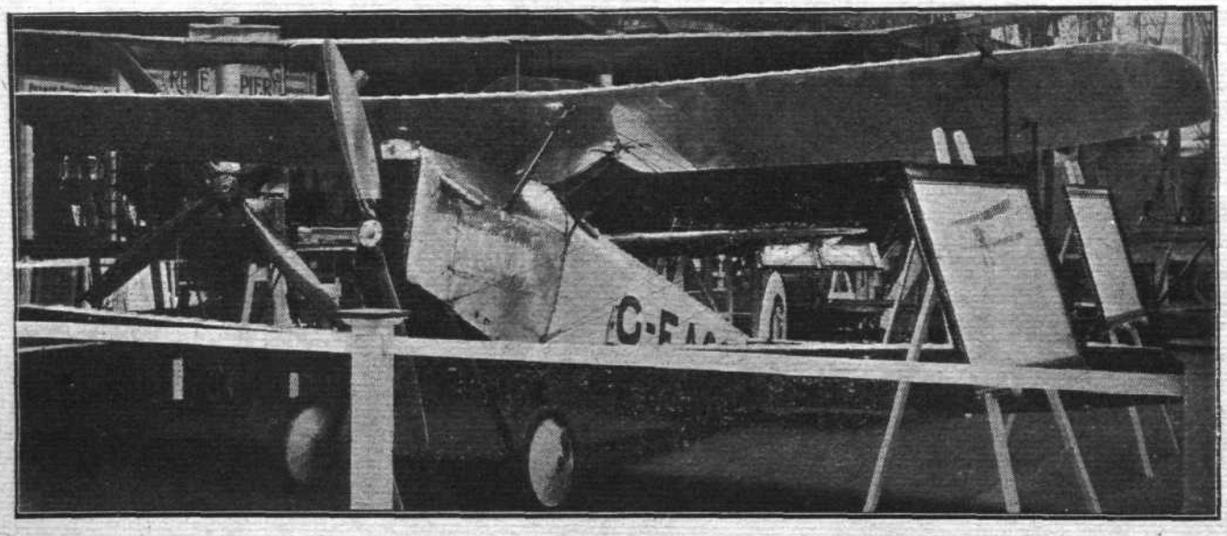
Sketch showing the neat mounting of the Renault engine in the Avro "Tourist"



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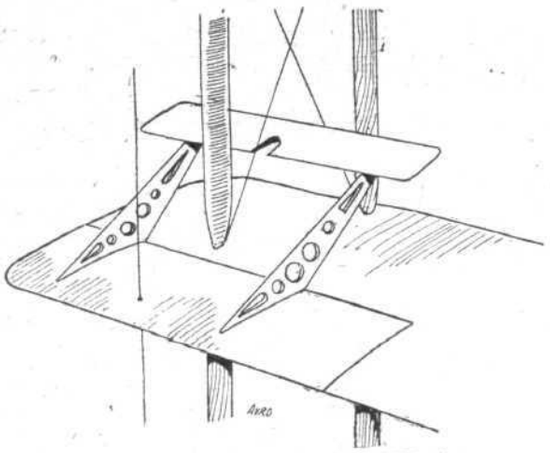
THE AVRO "BABY" AT OLYMPIA : This is the machine on which Mr. Bert Hinkler flew from London to Turin, non-stop, in 9½ hours

engines are not necessary for rapid locomotion. The details of the construction are already well known from previous descriptions in FLIGHT, and no further reference to them is necessary here.

The Avro 548 is practically a standard Avro with an extra seat added and fitted with an 80 h.p. Renault engine in place of the usual rotary. The manner in which Avros have built this engine into the machine is highly commendable, the appearance being excellent, as will be seen from the accompanying sketch. The petrol tank, which has the section of a thick aerofoil, is mounted in the top centre section, giving gravity feed to the carburettor with consequent simplicity.



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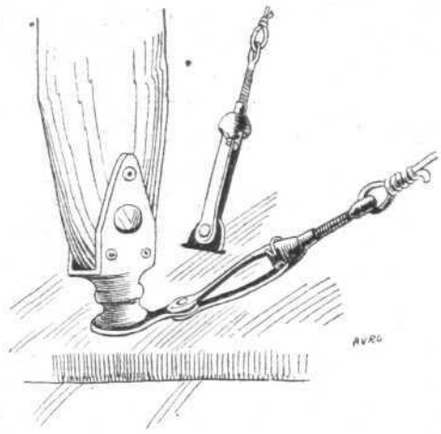
The *aileron* balance on the Avro Triplane



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An Avro interplane strut fitting

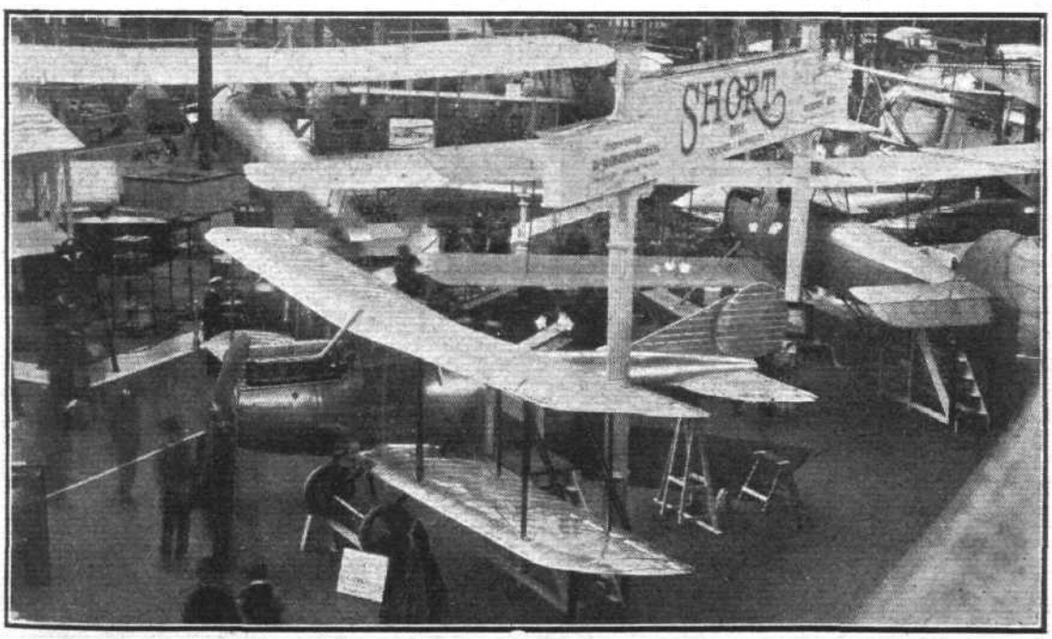
The Short Machines

It goes without saying that the Short all-metal machine is not only the most interesting on this stand but the feature of the show. This is the first time in the history of aviation that a British machine built of metal throughout, even to the wing covering, has been exhibited. It is, moreover, the first time an all-Duralumin—or practically so—aeroplane has been built in this country. It is not strictly true that the Short is built entirely of duralumin, as the wing spars are steel tubes and a few fittings here and there where local conditions demand are steel. Otherwise the machine is of duralumin.

This metal aroused great expectations when it was first brought out. Later certain shortcomings were discovered—or perhaps it would be more correct to call them peculiarities—which led to a general impression of unreliability of the metal for parts which had to resist loads of any magnitude. This impression has, unfortunately, spread to a considerable extent, and many who would have liked to use duralumin have refrained from doing so on the strength of this reputation. As a matter of fact, the metal is perfectly sound, if only it is properly treated, and it is chiefly ignorance which has precluded its more frequent adoption. Messrs. Short Brothers have, as is of course well known, had extensive experience of duralumin as applied to airship construction, and have thus had ample opportunity of learning what duralumin will and will not do, and the best way of treating and utilising it. The experience thus gained has been made full use of in the Short "Swallow" exhibited at the show.

The *fuselage*, which is of excellent streamline shape, is built up of a thin shell of sheet duralumin, formed by riveting together small sheets of the metal, bent over and riveted to circular and oval formers. The formers vary in cross-section, but, generally speaking, they are simple L-sections, with box section formers here and there where local strength is required. The sheets of the covering are divided and joined on the top and bottom centre lines of the body, the only other joints being the circumferential joints of adjacent sheets to one another and to the formers.

The pilot's seat, the flooring and foot rests for his feet, as well as the supports for the seat itself, are made of duralumin, as are also the four cradles supporting the steel tube engine bearers. The whole engine arrangement is extremely neat and free from complications and obstructions of any sort. The engine has in front of it a radiator shaped to fit the contour of the body, making a very neat nose and fore body. It should be added that there is a duralmin bulkhead separating entirely the engine housing from the rest of the machine, so that the danger of fire is reduced to vanishing point.



At Olympia: The Short all-metal machine

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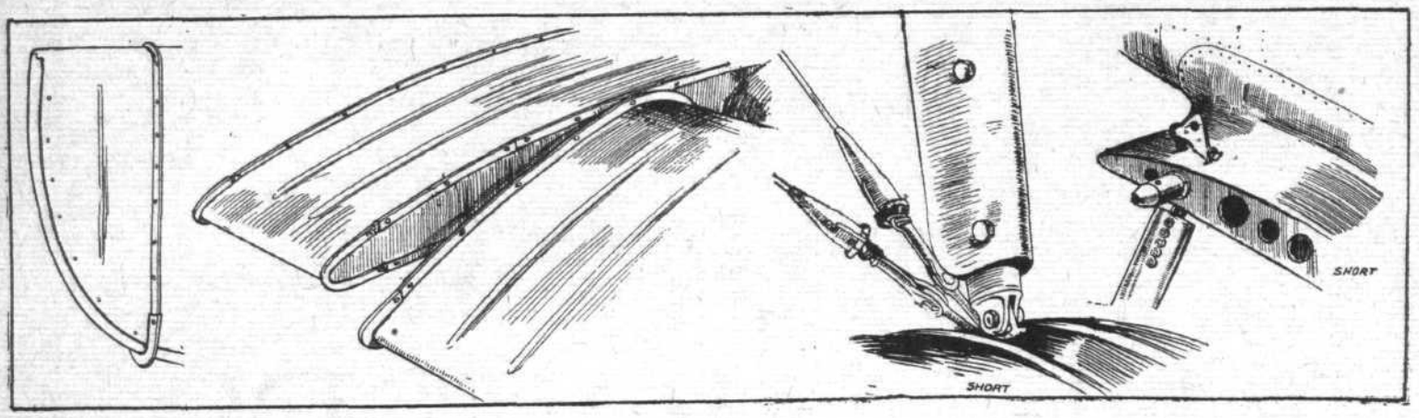

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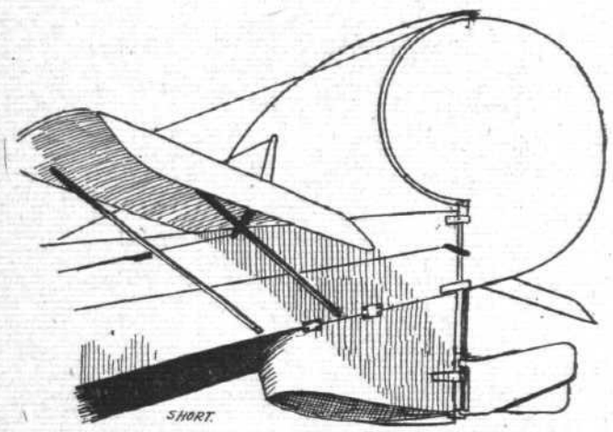
SOME CONSTRUCTIONAL DETAILS OF THE SHORT "SWALLOW": Reading from left to right the sketches show: The manner of bending the covering of the tail plane over at the edges. The shape of the wings near the root of the *ailerons*. An interplane strut fitting: note the Short type cable terminal. The extremely neat wing roots of the lower plane



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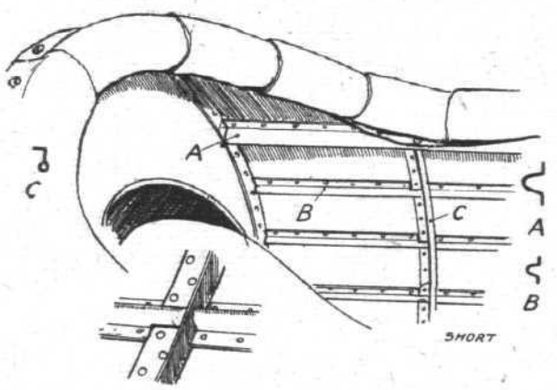
The tail planes and tail float of the Short Sporting model: Note the hinged corner of the water-rudder



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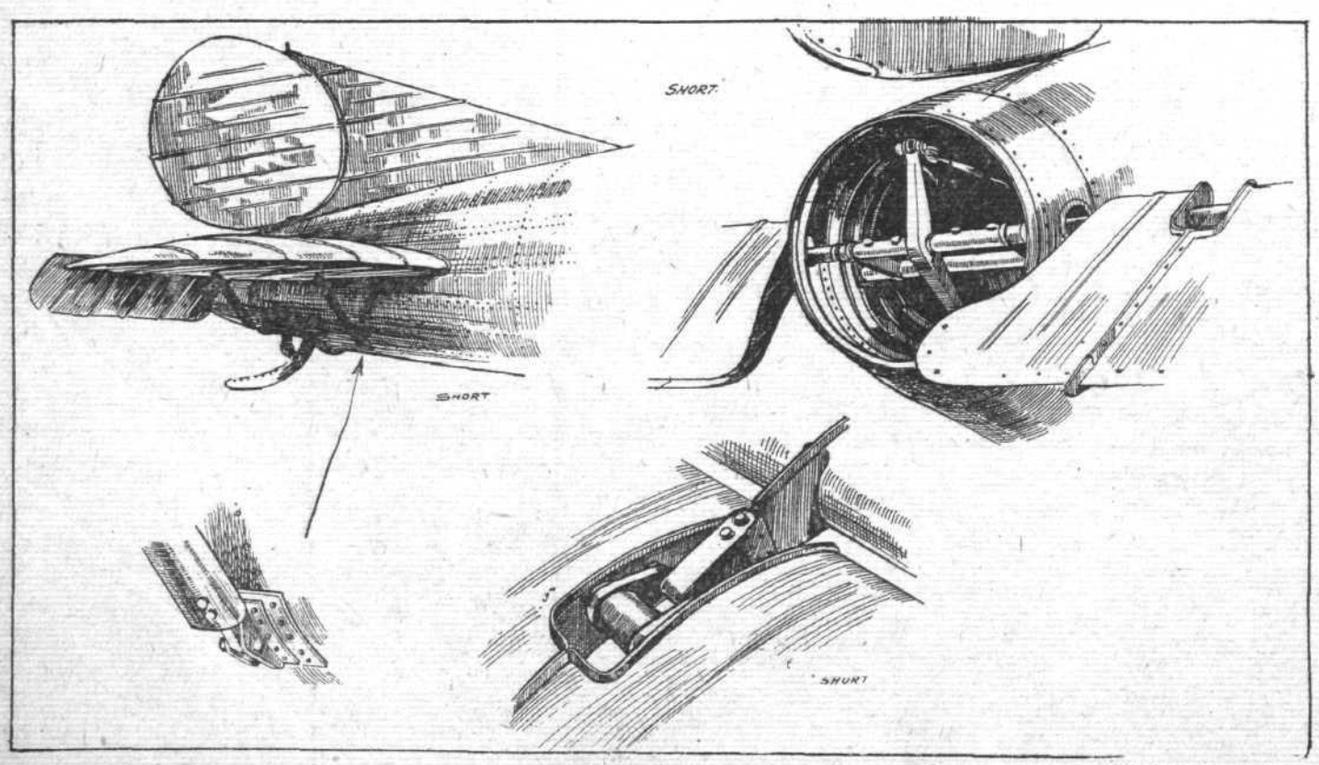
Some constructional details of the *fuselage* of the Short "Swallow"



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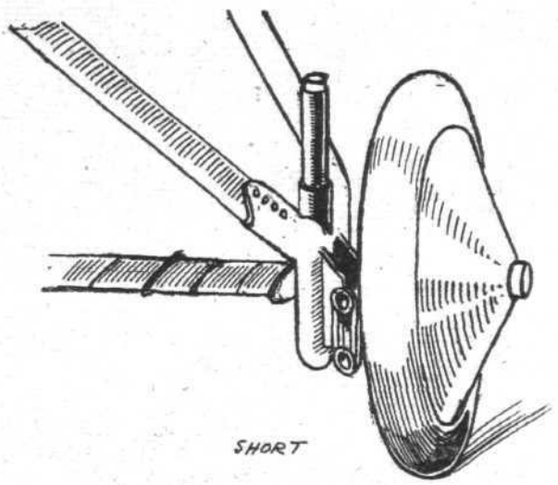
Some features of the tail organs of the show "Swallow"

Regarded as a biplane truss the wings are of the ordinary type—that is to say, there are two pairs of struts on each side, braced by stranded cables. Constructionally, however, the wings are as interesting as are the other components of this machine. Steel, in the form of tubes, is employed for the main wing spars. On theoretical grounds objections might be raised against the employment of a circular section beam, as giving a less economical distribution of the material. While this is not to be disputed so long as one considers the beam only, it is more than likely that, taking into consideration the simplicity of the internal wing fittings, rib attachments, &c., the whole structure comes out as light as if "I" or box section spars with more complicated fittings had been used.

The ribs—speaking of the ordinary ribs and not those of special design to meet local requirements—are simply flat



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Sketch showing the oleo gear on the Short "Swallow"

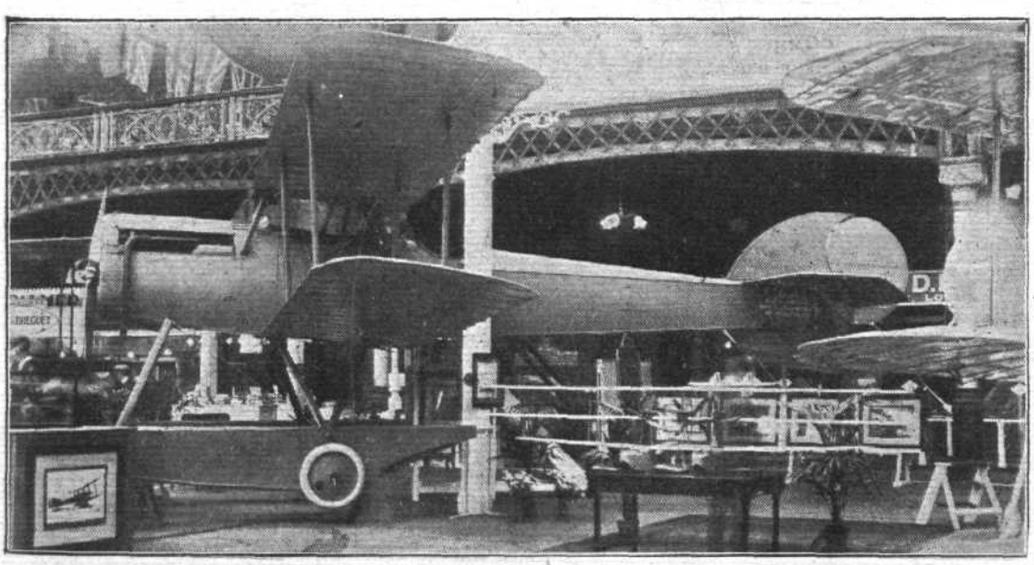
sheet duralumin stampings of somewhat greater depth than the actual aerofoil section used. They therefore project about $\frac{3}{16}$ in. above and below the section. Flanged lightening holes are stamped in the ribs at intervals to give lighter weight and greater stiffness. The duralumin sheet wing covering is put on in sheets running from leading to trailing edge, where top and bottom coverings are joined. At each rib the covering sheet is flanged upwards and rests against the projecting portion of the ribs. A channel section strip is placed over the rib projection and over the two flanges of the wing covering, the whole being riveted together at intervals of about 3 ins. A support for the wing covering is formed by bending over to a horizontal position the projecting portions of the wing ribs between rivets, the covering resting on these bent portions which form a sort of intermittent flange of the rib. By this design all the riveting is on the outside, a fact which greatly facilitates the assembly of the wing. Also in case of damage to the covering, the damaged sheet can be easily replaced. In order to add to the stiffness of the covering there are two corrugations stamped in the sheets between ribs, dividing the flat portion between the ribs into three narrow strips.

The lower wings are joined to roots growing out of the *fuselage*. Incidentally the covering of these wing roots is a very pretty piece of work. The upper plane, which is in two halves, is attached to a cabane consisting of two inverted V's braced fore and aft by a single tube in the plane of the centre line of the body. The *ailerons* are hinged to brackets on the rear spar, and have a balance portion in front of the hinge. A similar arrangement is found in the elevator and tail plane, while the rudder is balanced in the usual Short fashion by a projection working in a cut-out portion of the vertical fin.

The under-carriage has tubular struts, with rubber shock absorbers, and in the angle between the struts there is an oleo dashpot formed by a plunger attached to the axle working in a cylinder, as indicated in one of our sketches. It should be pointed out that the machine is all-metal, even to the airscrew, which is in the form of an aluminium casting faced with duralumin. The machine is stated to be actually a little lighter than one of the same size and power built of wood in the ordinary way, and is claimed to be very much stronger, while being better able to resist the influence of varying climatic conditions. Whether or not it is as yet a commercial proposition has been the subject of a good deal of discussion at the Show. The makers claim that, as nearly all the parts can be stamped out of sheet metal, the machine is actually quicker and cheaper to build than a wood machine, and after all they may be presumed to know better than anybody else the number of man-hours which have gone to its making. That the machine is a long step in the right direction cannot for a moment be doubted, and the firm is to be congratulated upon their foresight in tackling what is undoubtedly a difficult problem, but one which must be solved during the next few years.

As one out of the three seaplanes exhibited, the Short Sporting type machine should receive its share of attention, even if it does not possess the novel features which make the "Swallow" the most interesting machine at the Show. Messrs. Short Brothers have had unique experience in the design and construction of seaplanes, and the sporting type follows, generally, the lines of their well-known war types. The machine is designed to carry four persons, three passengers in addition to the pilot. Two seats are arranged in tandem under the top centre section, while a side-by-side cockpit accommodates two more passengers slightly aft of the trailing edge of the wings. These are provided with the usual Short folding arrangement. This firm, incidentally, was the first to employ folding wings.

Perhaps the most interesting feature of the design is the design of the floats. The old type Short floats, it may be remembered, were flat bottomed and cut off square at the heel. The floats of the Short Sporting model are tapered towards the heel, the portion aft of the step having a Vee bottom. In front of the step the bottom is hollow, somewhat after the fashion of the hulls of the Italian Savoia flying boats. The result is said to be that the machine gets off very quickly and with little spray, while for handling ashore the hollow bottom is a great advantage, since the bottom itself does not



The Short Sporting Seaplane at Olympia

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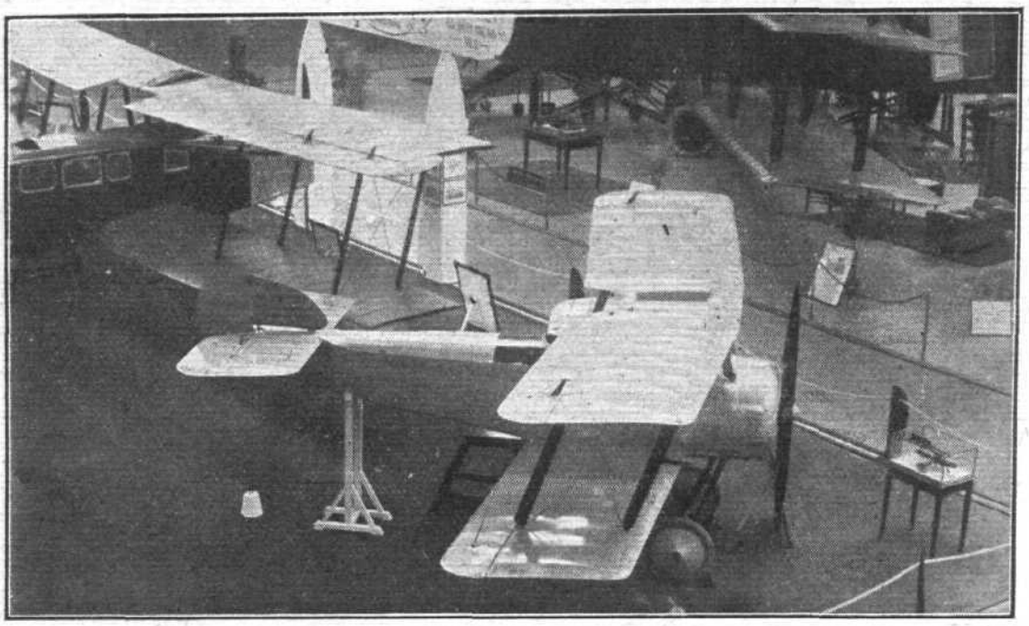

The Sopwith Dove is a development of the famous Sopwith "Pup."

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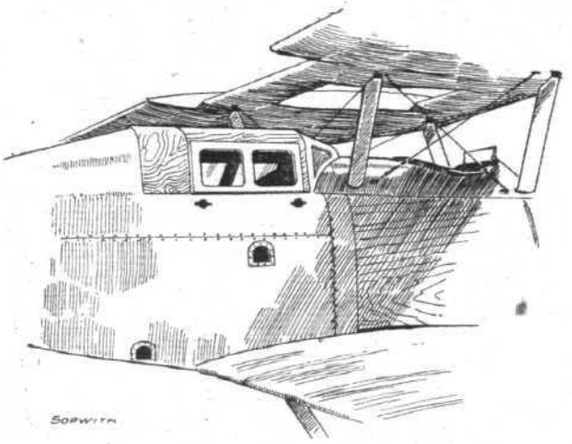
come into contact with the ground. The sides of the floats are shod with metal to give greater wearing qualities. As in previous Short seaplanes rubber shock absorbers are fitted inside the floats.

The Sopwith Machines

The stand of the Sopwith Aviation and Engineering Co., Ltd., is one of the most unique at the show, the four corner columns being formed by *fuselages*, while the "posts" are half propellers and the signboard is a long tail plane supported on two Sopwith *fuselages*. Three machines are exhibited: the small Dove, the Gnu, and the Antelope. The former is a development of the famous Sopwith "Pup," one of the most-liked aeroplanes of the war. In its new form, however, the machine is a two-seater, and the addition of the extra seat has necessitated a slight sweepback of the wings in order to get the centre of lift sufficiently farther aft to counteract the extra weight of the passenger. In other respects the Dove is to all intents and purposes identical with the Pup, and as the machine has a good top speed (95 m.p.h.) combined with the low landing speed of 35 m.p.h. it should soon become as popular for sporting purposes as was the Pup for war work.

The "Gnu" bears an unmistakable family resemblance to other Sopwith biplanes with rotary engines. The pilot is seated well forward, immediately behind the engine, and a panel in the centre section is left open so as to provide a better view upwards. Two passengers are accommodated side by side in the small cabin aft of the pilot's cockpit. A conservatory roof protects them from the wind, and this roof is hinged so as to allow of entering and leaving the machine. In detail construction the "Gnu" follows usual Sopwith practice,



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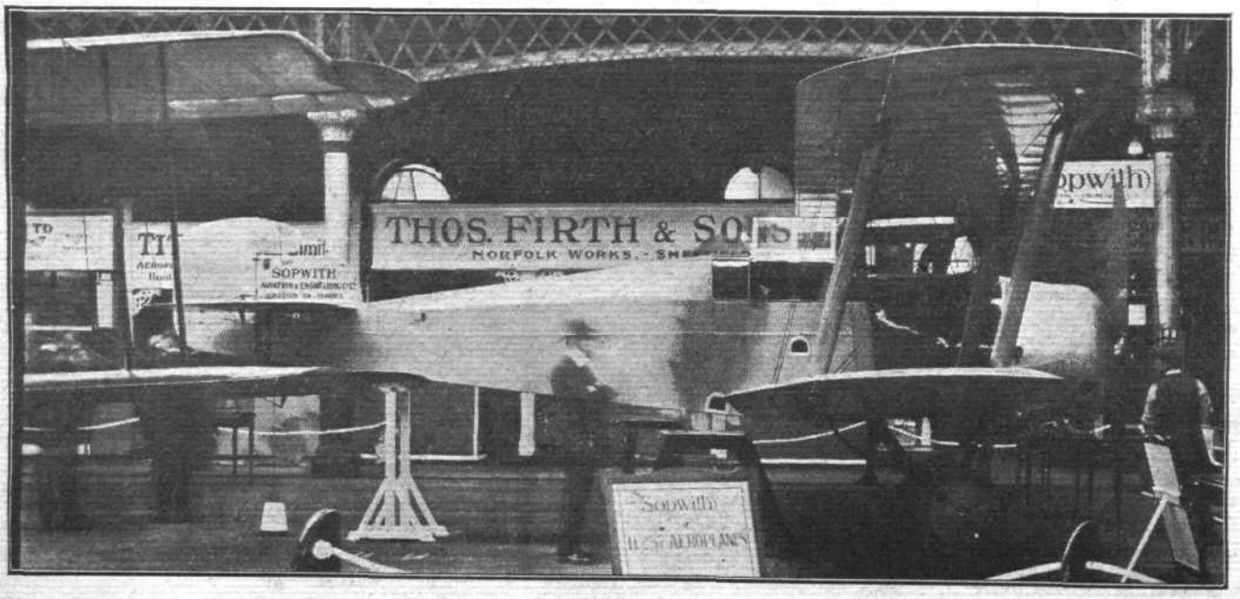
External view of the cabin of the Sopwith "Gnu"



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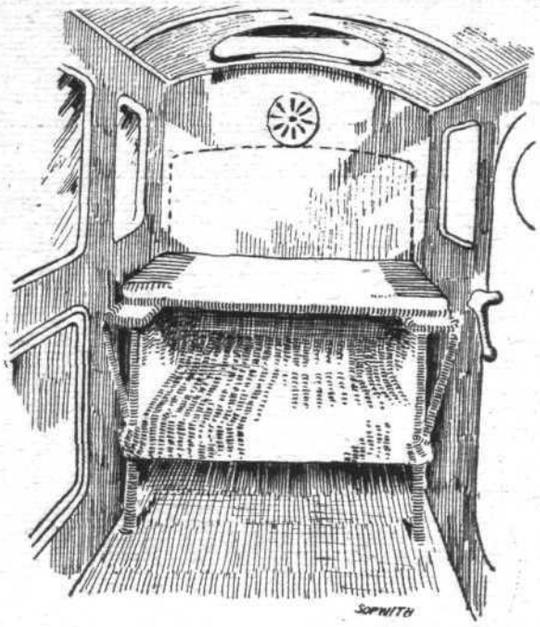
THE SOPWITH "GNU" AT OLYMPIA: The roof of the cabin is hinged along the top, giving access to the interior



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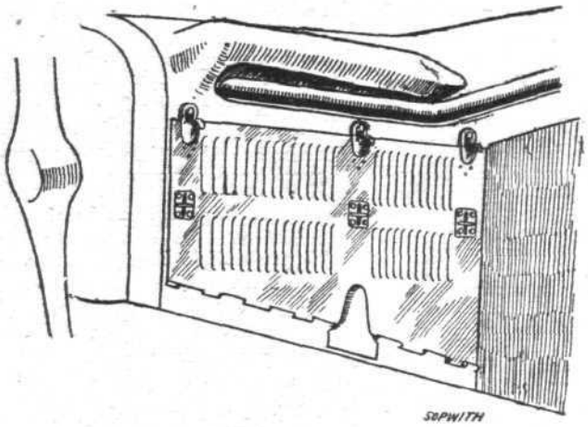
The aft seat in the Sopwith Antelope : The back-rest is hinged, and allows, when resting on the arm-rests of the wicker seat, the passenger to be seated higher, with his head protruding through an opening in the roof



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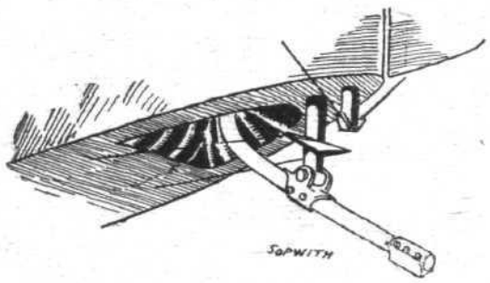
The engine housing on the Sopwith Antelope is designed with a bonnet like that of a motor-car, the whole side hingeing along the bottom *longeron*



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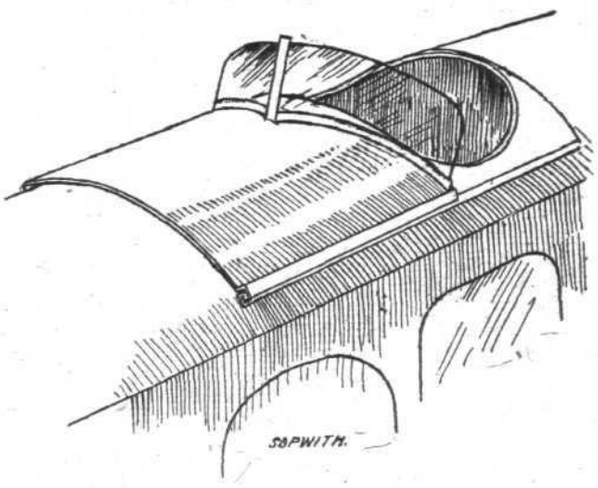
The steering tail skid of the Sopwith Antelope : The opening in the bottom of the *fuselage* has an oilcloth cover which prevents dirt from getting into the interior of the body



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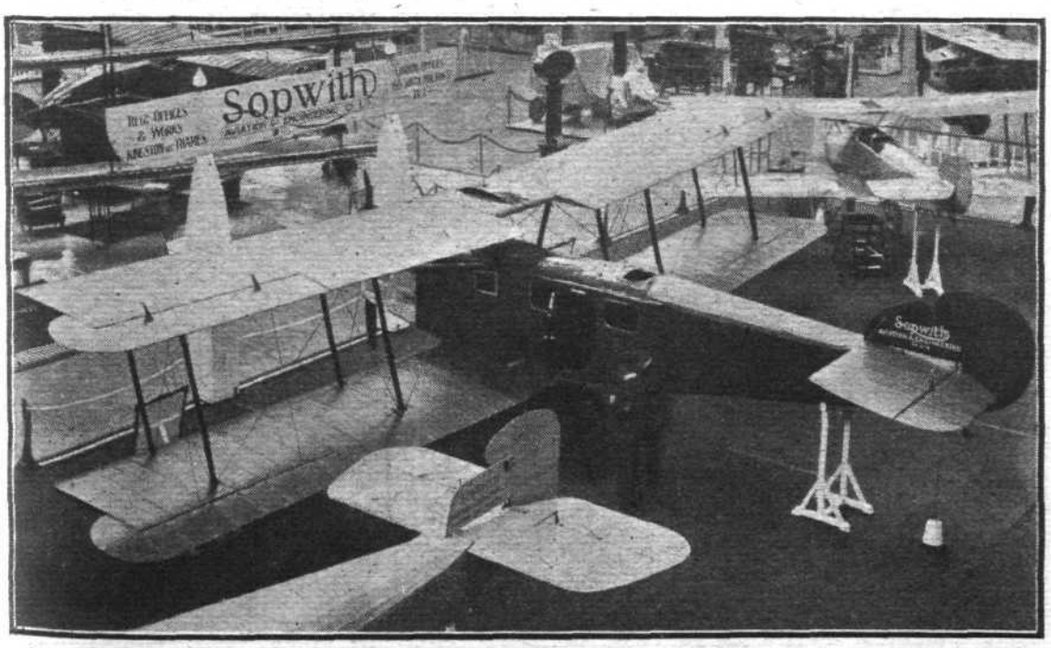
The sliding panel of the Sopwith Antelope is provided with a wind screen for the protection of the passenger when he is seated with his head outside



The Sopwith Antelope at Olympia : In this machine the cabin is entered straight from the ground through a door in the port side

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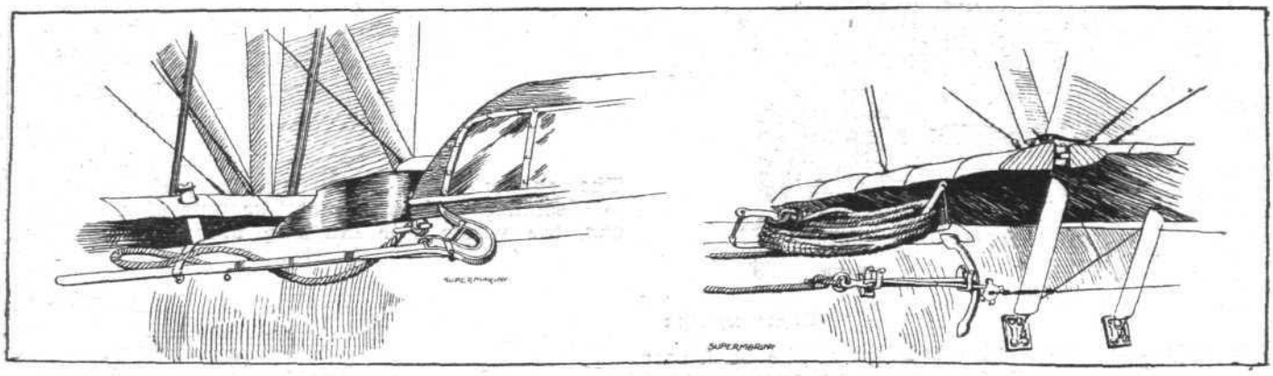
and in outward appearance it is very pleasing to the eye. The machine can be supplied with either a le Rhone or a Bentley rotary engine, according to the load it is desired to carry or to the performance which is demanded.

The third machine exhibited by Sopwiths—the Antelope—is very much on the lines of the Sopwith Atlantic and Australia machine, with, of course, a rearrangement of the passengers' and pilot's cockpits. In the Antelope the pilot sits in front of the cabin, where his view is very good in all directions, the upward view being improved by cutting away the trailing edge of the top centre section. The two passengers, who enter the cabin through a door in the port side, sit facing one another in comfortable wicker-work chairs. The back rest of the aft seat is hinged, and when tipped down so as to rest on the arms of the chair forms a raised seat, allowing the passenger to sit with his head outside the cabin roof.

The 180 h.p. Hispano Viper engine is enclosed in an aluminium cowl hinged along the lower *longerons*. By undoing a few bonnet fasteners the whole side of the engine housing can be opened for inspection of the engine.

As exhibited, the Sopwith Antelope has a simple V-type undercarriage, but lugs are provided for attaching, if desired, a pair of front wheels which will protect the propeller and prevent the machine from nosing over on landing.

A steel tube steerable tail skid is provided, and the opening in the floor of the body through which the skid passes has a flexible cover of oilcloth which prevents dirt thrown up by the skid from getting inside the *fuselage*.



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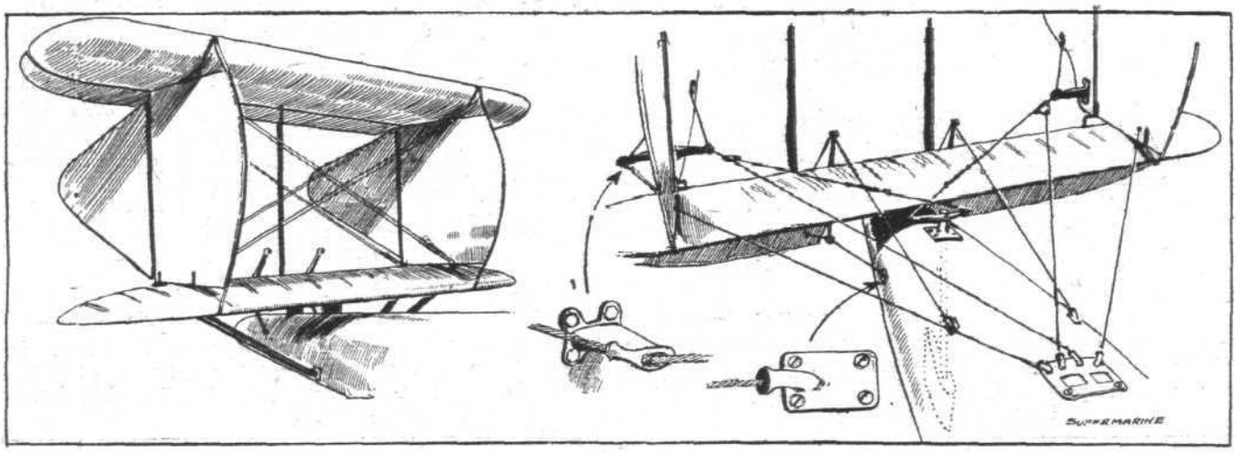
ON THE SUPERMARINE CHANNEL TYPE : Left, the ingenious boat-hook, and, right, the neat way in which the anchor rope is coiled up on the outside of the hull, thus avoiding getting the cockpit wet and muddy



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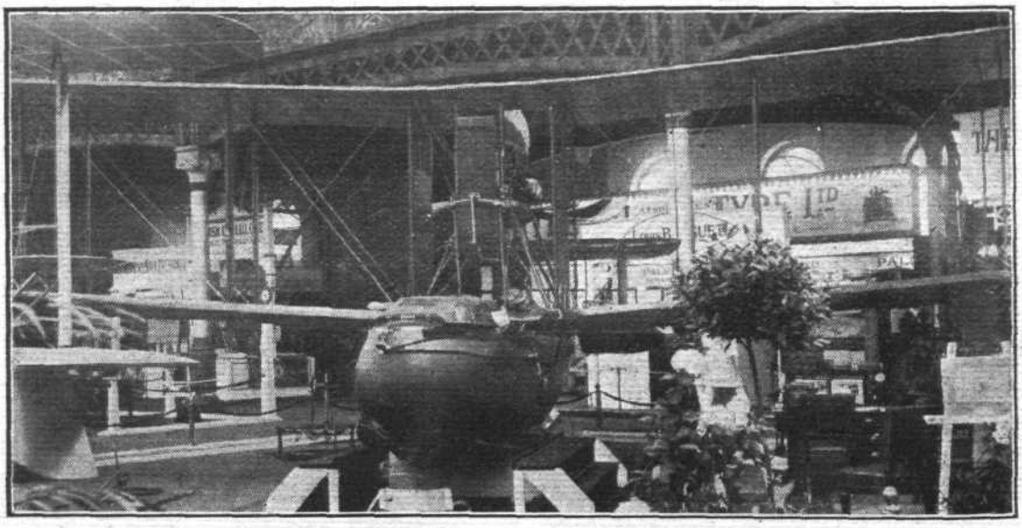
THE BIPLANE TAIL OF THE SUPERMARINE CHANNEL-TYPE FLYING BOAT : In the sketch on the left the control cables have been omitted for the sake of clearness. The sketch on the right shows the manner of interconnecting the water-rudder and air-rudders. Here the bracing wires have been omitted



At Olympia : The Supermarine Channel Type flying boat

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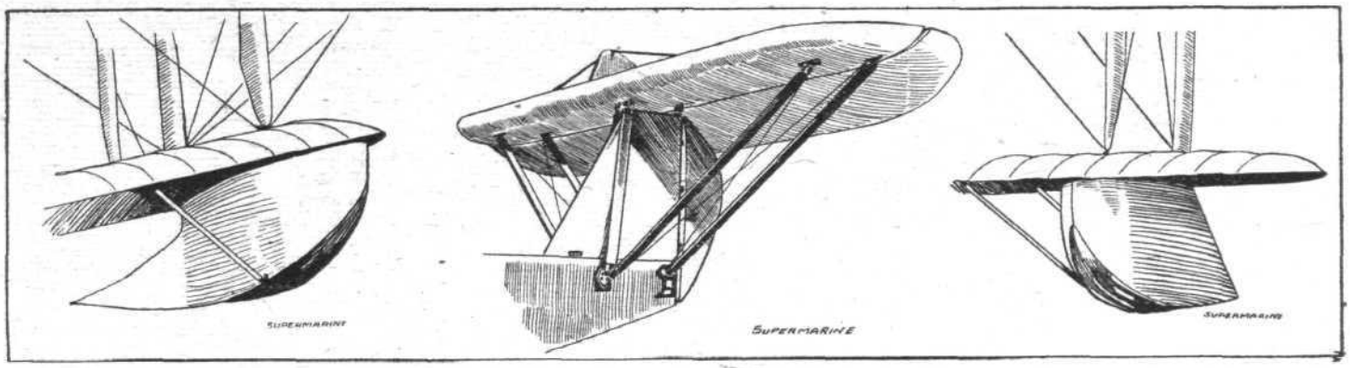

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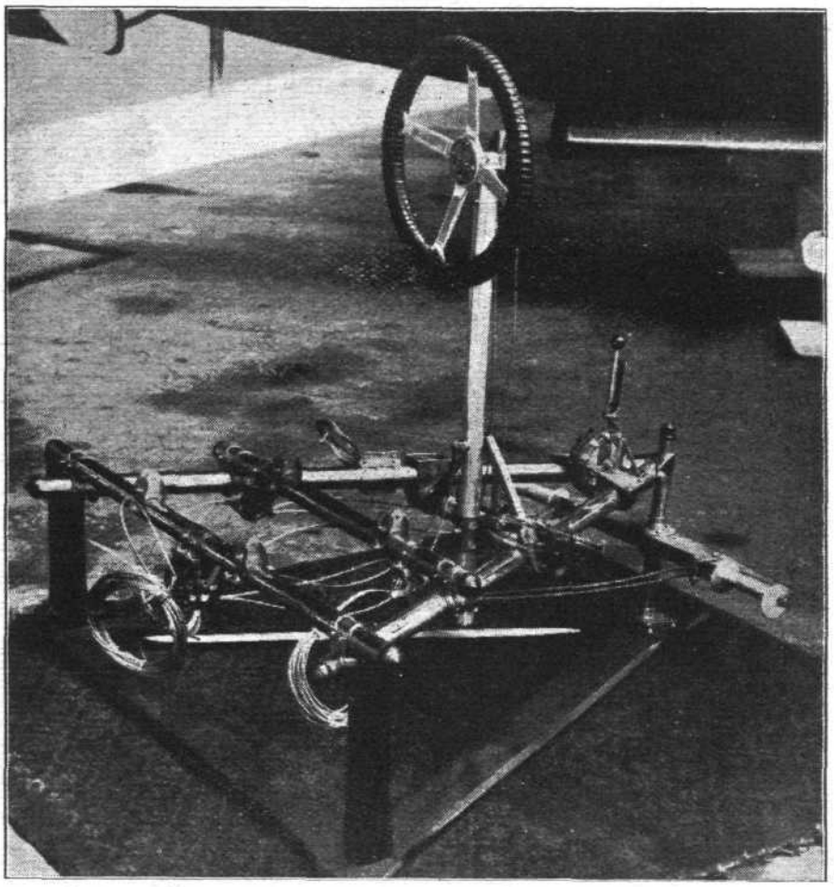
SOME SUPERMARINE DETAILS: Left, the wing tip float on the Channel type. Right, the wing tip float of the "Sea King," and in the centre the tail of the "Sea King"

A Flying Boat Exhibit

There is a healthy sea atmosphere on the stand of the Supermarine Aviation Works of Southampton, and there is that delightful yacht builder's touch about the machines which is so pleasing to everyone interested in and fond of marine craft. Everything on board is very shipshape and carefully thought out, and it is not in the design of the machines alone but also in their details and accessories that one can trace the expert boat builder's hand. The two machines shown, the Channel type and the "Sea King" single-seater, are built along similar general lines, although differing in several details. The Supermarine hulls are of elliptical or oval section, with a single-skin planking put on longitudinally, the butt joints of the planking occurring opposite thin longitudinal stringers. The whole is then covered with fabric. One of the advantages of this form of hull construction is that the boat possesses a great amount of flexibility, acting in fact as a huge shock-absorber. With the older type of flat-sided hulls this elasticity was not present, and consequently the shocks transmitted were much more evident. Also the hulls had to be built considerably heavier, and even then they were more difficult to keep watertight. In alighting with a supermarine flying boat in a rough sea one can see the bottom part of the boat flexing quite perceptibly, but so sound is the construction that the



AT OLYMPIA: A set of Supermarine controls. Note the three-point suspension

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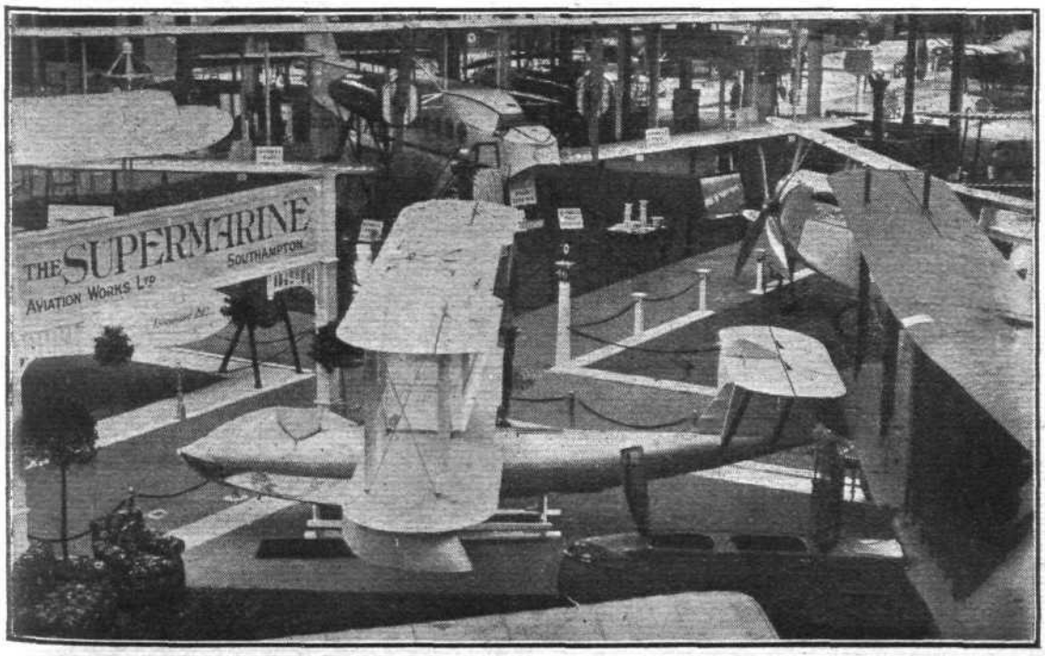

The Supermarine "Sea King," a single-seater flying boat

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boats never spring a leak. One of the Channel type boats was deliberately stalled from a height of nearly 100 ft. and struck the sea sideways. The blow on the side of the starboard wing tip float was so great that the spar in the outer bay buckled upwards, in the inner bay downwards, and the boat got a fair amount of water in through the cockpit. When the machine was hauled ashore it was found that the hull was absolutely watertight. A new pair of bottom planes was put on during the night, and the same boat has, since then, flown several thousand miles. In order to test the seaworthiness of the hulls Supermarine pilots have repeatedly made landings in the Channel in winds of 40 m.p.h., and it has been found to be possible to take off or alight in the sea accompanying such wind without shipping any water. These two tests prove, we think, both the quality of the Supermarine hull construction and the efficiency of the lines of the hulls.

The steps, of which there are two, are separate structures and are divided by the keel. Each half-step is divided by two watertight bulkheads into three compartments, so that there are in all six watertight compartments in the step. This should ensure that in the event of a step being damaged by striking a hard object in the sea on starting or alighting there will be ample buoyancy left to keep the machine afloat.

The Channel type, although fitted with a Beardmore engine, carries three passengers in addition to the pilot. It will thus be seen that the boat is very efficient, the maximum speed with this load being about 70 knots. The pilot's cockpit is just forward of the wings. In front of him is another cockpit accommodating two passengers side by side, while a third passenger is placed near the nose of the hull. It has already been mentioned that the Supermarine hulls are very flexible. In order not to destroy this flexibility all the internal fitments, such as thwarts for the seats, supports for the controls, etc., are given a loose fit which allows the hull a very considerable amount of "play." In order to effect this as regards the controls, these are mounted on a species of three-point-suspension. The platform carrying the controls has two supports at the rear and one in front. The two rear corners rest in crutches that allow of a certain amount of twisting. No matter, therefore, how the hull flexes, the control platform is always true in comparison with the control lever, etc., and there is no fear of the controls getting jammed.

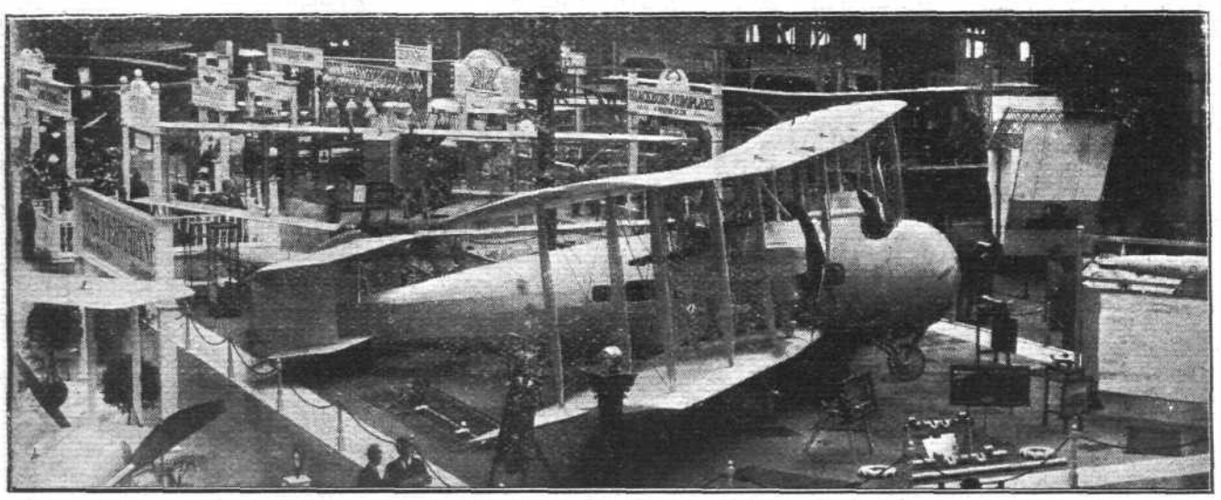
The Channel type has a biplane tail, with the top tail plane inverted, so to speak. That is to say, it has a negative camber. A small water rudder is fitted, which allows of steering the machine at very low speeds. This is naturally a great advantage for navigating in and out among the moving craft of a congested harbour, and should add to the general utility of the machine. The manner of interconnecting the air rudders and the water rudder is interesting, and is shown in one of the accompanying sketches.

Mention has already been made of the neatness of many of the accessories carried on the Supermarine flying boats As an instance we may take the boathook. This implement has an automatic catch boathook which greatly facilitates picking up moorings, forming in reality an extension of the pilot's arm, and enabling him to make fast to a buoy in the shortest possible time. The action of the hook will be clear from the accompanying sketch. Another point which has received careful attention, and which shows the practical commonsense way of the designers, is the attachment of the anchor and mooring rope. This, as will be seen from the sketch, is coiled up on the side of the hull, thus avoiding getting water and mud inside the cockpits. The line is passed around to the nose, where there is a towing cleat of special design, enabling the pilot to do all handling of the anchor rope from his cockpit.

The "Sea King" is very similar in general design to the Channel type, but is a small fast single-seater, capable of a speed of over 100 m.p.h. with a 160 h.p. Beardmore engine. The chief difference between the two boats, apart from size, is that the "Sea King" has a monoplane tail, and the rudder is extended down to the heel of the hull, forming a water rudder. This part of the rudder is covered with three-ply wood. As the machine is of such small overall dimensions, its wings are not made to fold as are those of the Channel type.

Vickers, Ltd.

The Vimy-Commercial, with its commodious cabin and unusual appearance, attracts great attention. No doubt this is also due to the historical flights made by Vickers-Vimys during the last 18 months or so. The machine is well known to FLIGHT readers, reference having been made to it from time to time in our columns. The *fuselage* is built-up of two, or rather three, distinct units. The first of these is formed by the cabin, which is a monocoque structure built on the well-known Saunders "Consuta" system of double diagonal plankings joined by glue and parallel stitchings of copper wire. This construction allows of a clear cabin space without internal bracing. The seats are arranged along the two sides, leaving a passage in the centre. The front cockpit is entered through doors in the front of the cabin, and dual control is provided. The entrance door of the cabin carries on the inside steps by which entering the car is easy and comfortable. Another larger door in the side farther forward can be used for goods when the machine is stripped of its seats, or for luggage when used as a passenger machine. The space under the floor of the pilots' cockpit affords reasonable luggage space.



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AT OLYMPIA : The Vickers-Vimy-Commercial

The petrol tanks are slung underneath the *fuselage* by flat steel straps, and specially large filters have been fitted, so that there is little danger of choking, especially as the filters are easily removed for cleaning.

The rear portion of the *fuselage* is a girder structure, with hollow circular section *longerons*. The manner of bolting this part of the *fuselage* on to the cabin part is the subject of one of our sketches. The third section to which reference has been made is a tubular structure at the extreme rear of the *fuselage*. This carries the biplane tail, and terminates in a horizontal transverse tube at the stern, which facilitates handling the machine on the ground. The machine is in other respects so well known as to need no further description here.

As the only amphibian machine at the Show, or at any rate shown as such, a great deal of interest naturally centres

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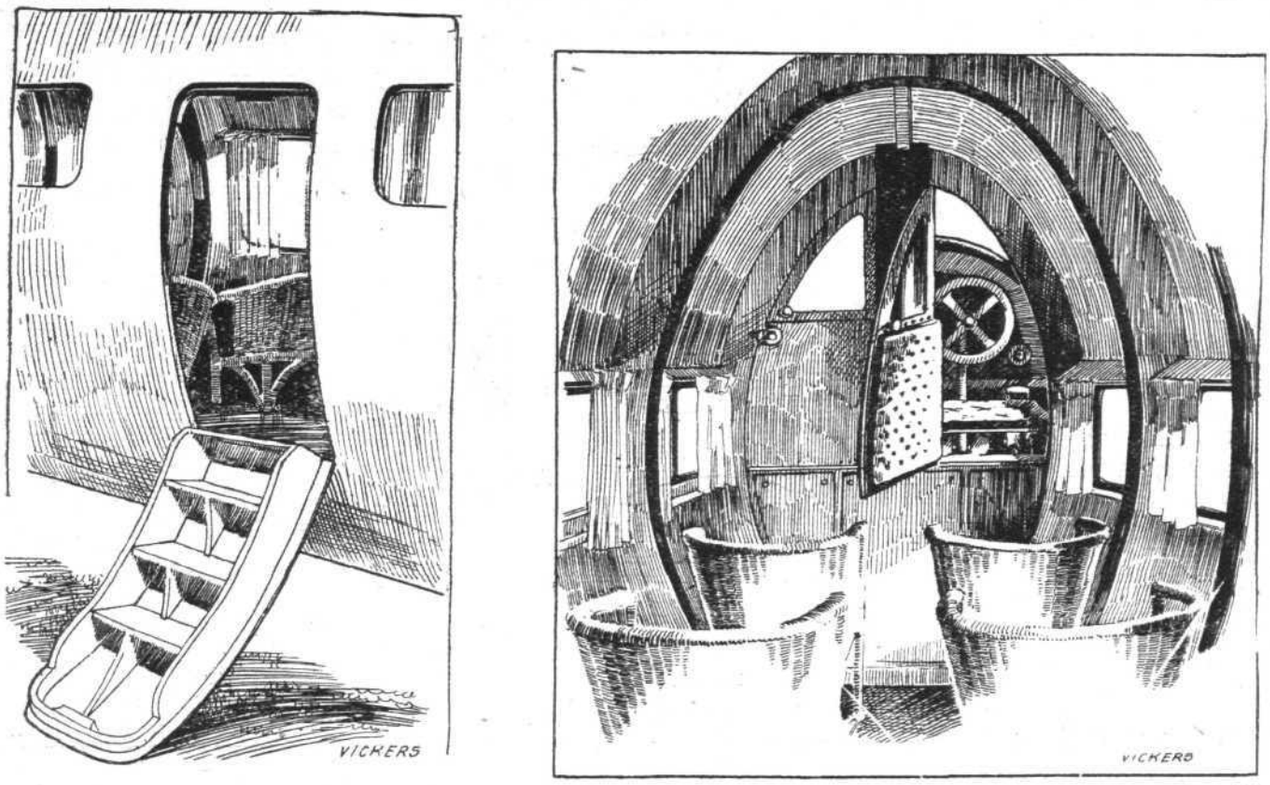

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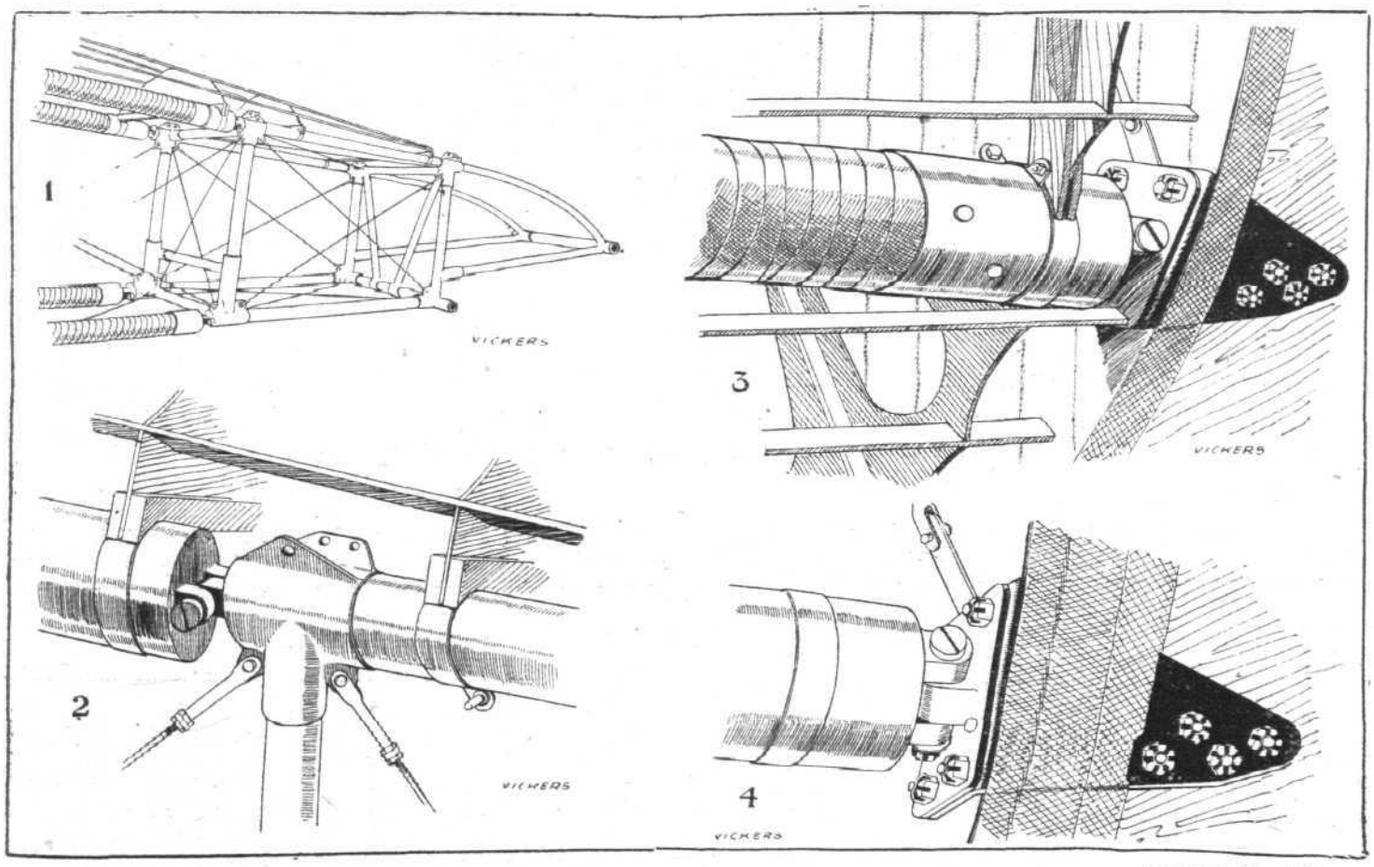
ON THE VICKERS-VIMY-COMMERCIAL : On the left the hinged door which also forms the steps, and on the right the cabin, showing door to pilots' cockpit

around the Vickers "Viking." That the aeroplane which is capable of alighting on either land or water at will will score over one fitted for one element only will be obvious. In the course of the duties of a commercial machine it will often happen that a land machine may have to cover a fair stretch of sea, or that a seaplane may have to travel considerable distances over land. If not of the amphibian type this will always entail a certain amount of risk, which is greatly reduced or even avoided by a combined land and water undercarriage. Unfortunately, carrying a set of wheels and their operating gear means a considerable extra load on the machine, which could be utilised for paying



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ON THE VICKERS-VIMY-COMMERCIAL : 1, the extreme aft portion of the *fuselage*. The terminal cross-tube is used for handling the machine on the ground. 2, the attachment of the tubular tail portion to the *fuselage*. 3, attachment of girder part of *fuselage* to aft bulkhead of cabin. 4, detail of *longeron* lug of 3

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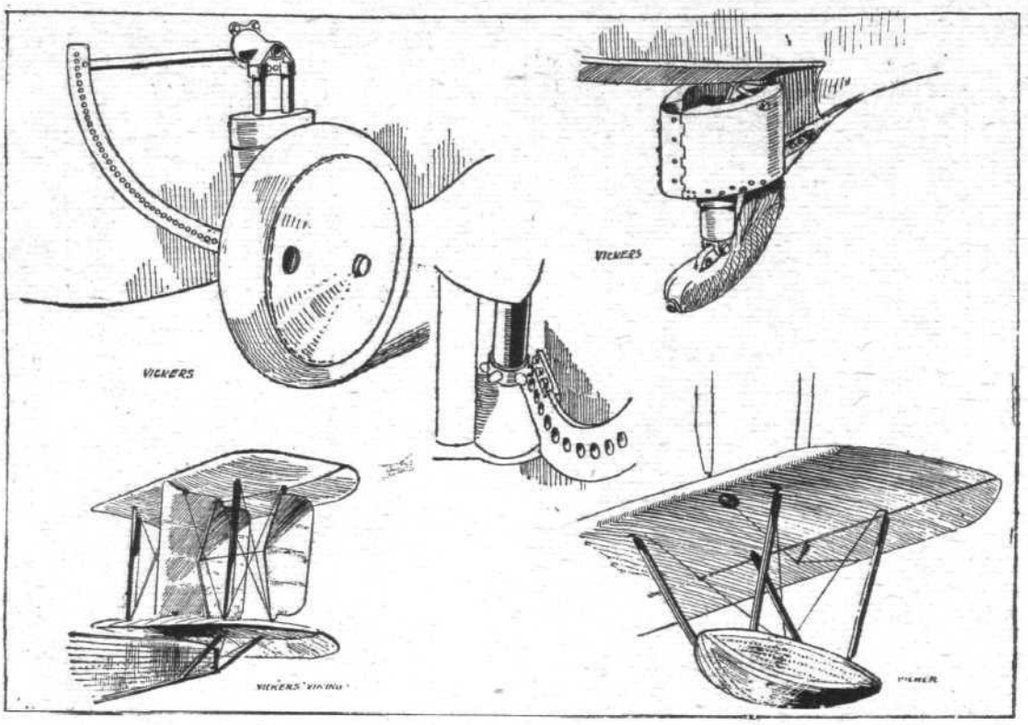
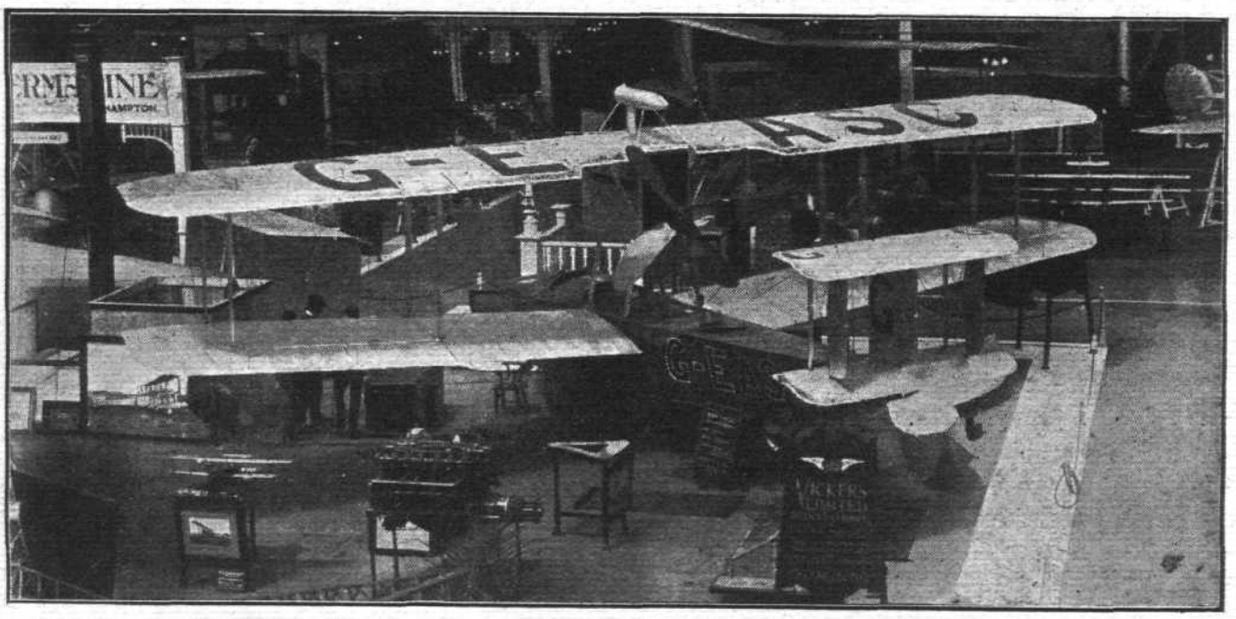
On the Vickers Viking: Some details of the retractable land undercarriage, combined tail-skid and water-rudder, biplane tail, and wing tip float





The Vickers "Viking" amphibious flying-boat at Olympia

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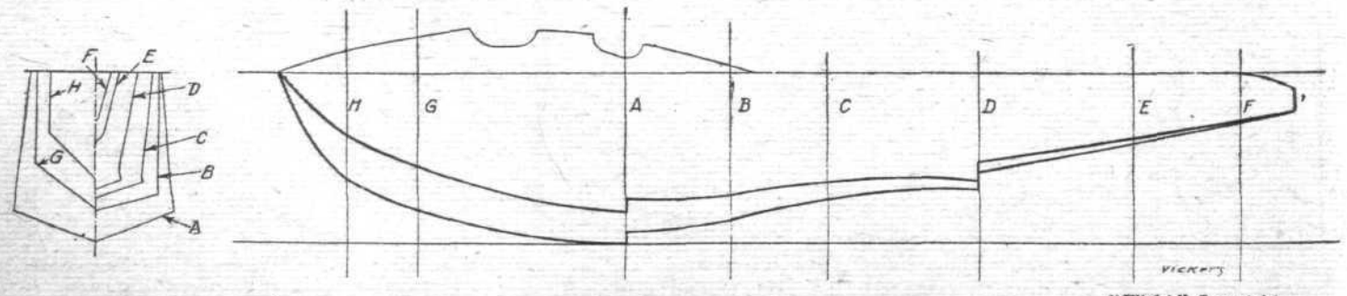
cargo. Unless therefore, the stretches of land over which the machine has to fly are very considerable, it is evident that the land chassis will not be carried. For many purposes for which aircraft will be used in the future conditions will, however, be such that if the machine is to perform its work it will have to be capable of alighting on either, and any



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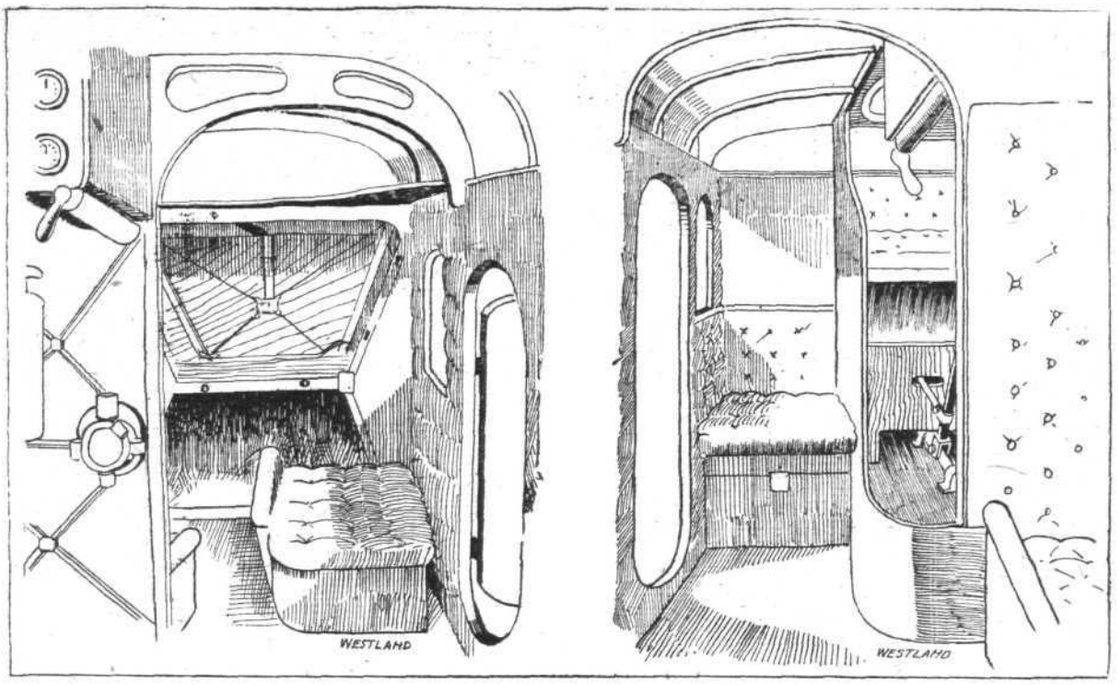
The lines of the hull of the Vickers "Viking" are somewhat unusual: The sketch is purely diagrammatic, and should be taken as an approximate representation only

FLIGHT
THE AIRCRAFT ENGINEER. AEROPLANE



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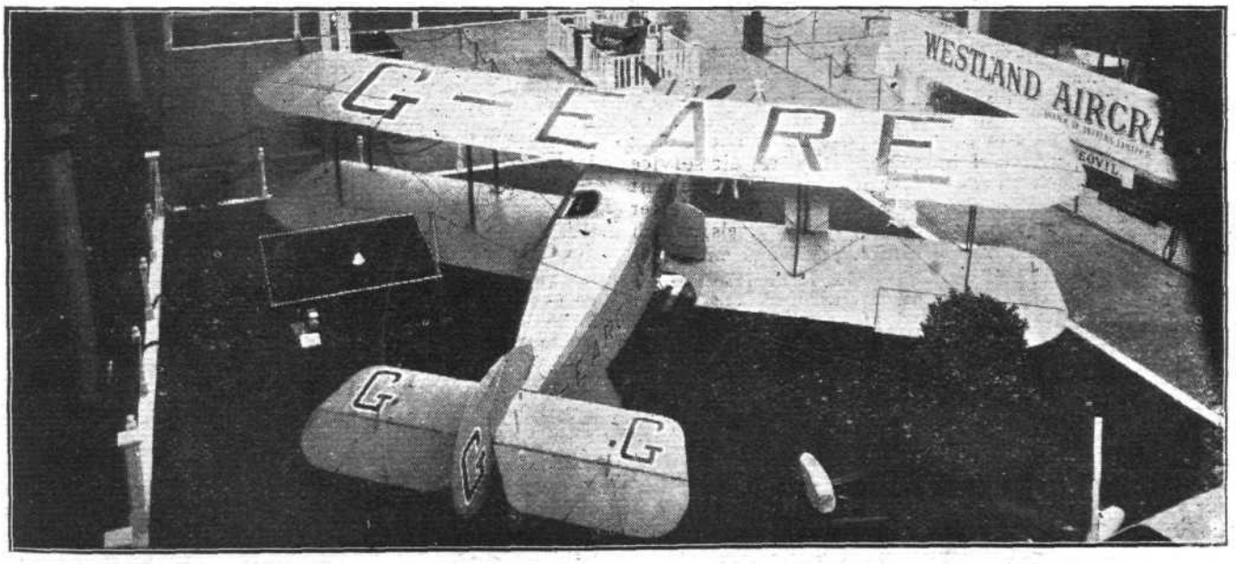
Two views inside the cabin of the Westland Limousine: On the left the two forward seats are shown, and on the right the aft seat and pilot's cockpit

attempt at producing a satisfactory combination is therefore to be greeted a step in the development of aircraft.

In the Vickers "Viking" the hull is flat-sided, and each side has an arc of sheet steel with a series of holes in it. A small star wheel is carried at the lower end of a shaft passing down along the tubes of the wheel undercarriage. This shaft is operated from the pilot's seat through a transverse shaft near the top rails of the boat, so that as the shafts are rotated they rotate the star wheel engaging with the arcs or quadrants on the sides of the hull, and thus lower or raise the wheels. Messrs. Vickers, Ltd., have had a most interesting film taken which shows the behaviour of the machine both on land and sea, and as far as could be seen both were highly satisfactory. It is quite amusing to see the machine come taxying in, and then without hesitation climb up on the beach. The machine certainly appears to get off well, and the unusual hull design, which has been the subject of some speculation, appeared to be quite effective, the machine getting off and alighting with no more spray than one associates with all flying boats. On land also the machine appears to behave very well indeed, although it is possible that after a great number of landings the hull might become strained. It will be realised that the hull has to be considerably stronger when used thus, owing to the whole weight of the machine coming at one point, instead of being more or less distributed over the hull as it is in the ordinary flying boat. If, however, the land undercarriage is used chiefly in emergency there would appear to be no reason to suppose that the gear would not be successful and capable of lasting quite a long period.

The Westland Limousine

It is now several months since we described in detail the first Westland Limousine designed and built by the aircraft department of Petters of Yeovil. Since then the machine has undergone several minor modifications, although in its broad lines it is still very much like the original machine. The chief feature of the Westland Limousine is, in our opinion, the seating arrangement, which is a good compromise between the two types: pilot in front and pilot far aft. Both of these arrangements have their drawbacks, but in the Westland the bad points of both would appear to have been avoided. The pilot and rear passenger sit side by side, but the pilot at a higher level, with his head out in the open, while the passenger is inside the cabin. The other two passengers are slightly farther forward, one on the port side facing forward, and the other on the starboard side facing aft. Thus, in spite of its comparatively small size, the Westland Limousine is very roomy, while the weights are at the same time close

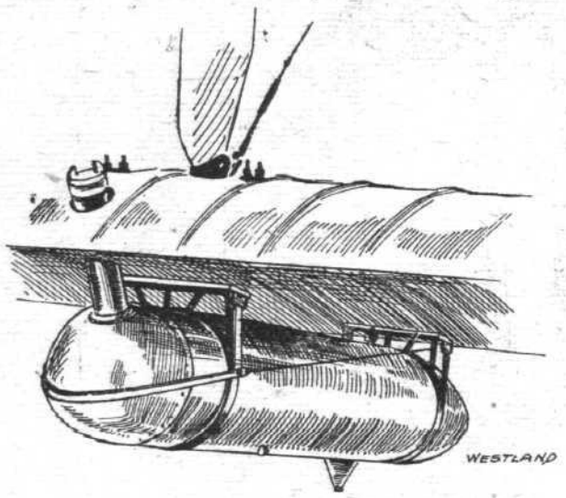


Flight" Copyright

THE WESTLAND LIMOUSINE: The main petrol tanks are mounted one on each side under the lower plane

together so that any variation in the number or weight of passengers carried will not seriously affect the trim.

The show machine is fitted with a 300 h.p. Hispano-Suiza engine neatly enclosed and yet very accessible. The whole engine housing is a separate unit, attached to the cabin portion of the *fuselage* by 6 bolts. It is thus an easy matter

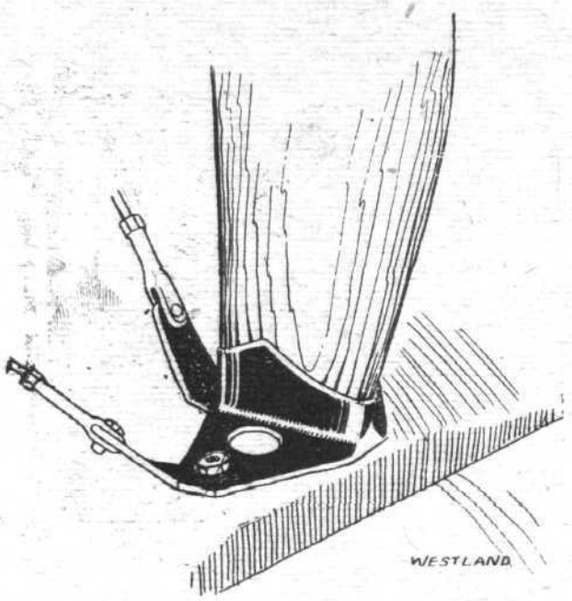


"Flight" Copyright

The petrol tanks of the Westland Limousine are carried under the lower plane, reducing the risk of fire and giving extra space in the *fuselage*

to remove an engine unit for repair, and to substitute a new one while that is being repaired. Similarly, the rear part of the *fuselage* is a structure of the girder type bolted to the aft wall of the cabin unit. Here, however, the fabric covering extends over the joints, and the removal of the tail portion is not quite so easy.

A novel feature of the show machine is that the petrol tanks are carried one on each side under the bottom plane In this manner extra space is afforded in the body, while at



"Flight" Copyright

An interplane strut fitting on the Westland Limousine

the same time the risk of fire is considerably reduced. Part of the extra cabin space resulting from placing the tanks under the wing is used for luggage, and we understand it is intended to fit a bar across the front of this space so that the luggage can be put in and the locks sealed by the customs authorities, thus saving valuable time at the port of arrival

AERIAL MAIL SERVICES

Cheaper Air Post to Paris

THE Postmaster-General announces that from today (Thursday) the special fee charged, in addition to the ordinary foreign postage, on correspondence sent from this country to Paris by air mail will be reduced from 2*s.* to 2*d.* per ounce. The fee of 6*d.* per packet will continue to be charged on correspondence intended for express delivery.

The New Service to Belgium

MONDAY last saw the successful inauguration of the air mail service between London and Brussels, the contract for which has been secured by Messrs. Handley Page. For the present the outward mail will be despatched from the Cricklewood Aerodrome at about 2.30 p.m., and will be due at the Brussels Post Office at about 5.30 p.m. In the homeward direction a mail will be despatched every week-day, leaving Brussels at 10 a.m. and reaching the London Post Office about 1.30 p.m. The air mail fee has been fixed at 2*d.* per ounce, and there will be unrestricted facilities for posting. Correspondence for Brussels posted in London should normally be delivered on the same evening without express delivery, and correspondence for other places in Belgium by first post on the following morning. Thus a letter for Brussels sent by the air service will be delivered at least 12 hours earlier than if it were sent by the ordinary afternoon mail from London; and a letter for a place in Belgium some distance from Brussels, which would not reach Brussels by the ordinary service in time to fall into the onward night mails from Brussels, will be appreciably accelerated by use of the air service. Every class of correspondence, registered and unregistered, except parcels and insured packets, may be sent. They may be posted at any post office, or, if unregistered, in any public posting-box. Every air mail packet must be prominently marked in the top left-hand corner of the cover with the words "Air Mail," or, if express delivery is desired, "Air Mail Express." The fees shown below must be prepaid by means of postage stamps affixed to the cover in the ordinary way :—

(1) Ordinary foreign postage, and registration fee (where payable).

(2) An air mail fee of 2*d.* per ounce.

(3) An express fee of 6*d.* per packet when express delivery is required.

In London, letters may be posted at District Offices up to 11 a.m., or, if handed in, up to 1 p.m.

A Month at Le Bourget

DURING the month of June, 775 persons arrived at Le Bourget, the air port of Paris, by air, the number of flights totalling 372. The baggage transported amounted to 10,776 kilogs., in addition to 278 bags of letters.

A Paris-Prague Air Service

FROM a message received in Paris from Prague, it appears that a Franco-Roumanian company has secured ministerial approval of a contract for the inauguration of a regular air mail service between Paris, Prague and Warsaw, to commence in August.

Air Navigation in France

A DECREE signed by the President and published in France on July 14, brings that country into line in connection with the International Air Convention. It prescribes that machines of other countries which have signed the convention may fly over France, with the exception of certain military areas, and aircraft coming from abroad must also keep to certain routes which will be subsequently defined. The rules and regulations regarding certificates, logs, licences, etc., are now being drawn up and they will be published shortly.

Civil Aviation in France

BEFORE starting off by aeroplane for Antwerp on July 19, M. Flandin, the French Under-Secretary for aviation, gave some interesting details as to progress in France. No new military machines are being constructed, but old ones are being transformed and modernised. The production of civil machines is being intensified, it being realised in France that a large reserve of pilots must be retained. In addition to the three regular lines now running to London, Brussels and Geneva, a new one—Paris-Deauville—will shortly be started. Good progress is being made at the new air port at Orly, south of Paris which will presently relieve Le Bourget. At Orly there will be accommodation for airships including those of the Zeppelin type. M. Flandin prophesied a big development of postal and passenger traffic, and said a number of new aerodromes are being arranged.

FLIGHT

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

AERIAL DERBY HANDICAP

Course 205 miles

Competitors' Number.	Entrant.	Pilot.	Aircraft and Engine.	Handicap.	Starting Time.
1	Bert Hinkler	Bert Hinkler	Avro "Baby," 35 h.p. Green	1 hr. 41 mins.	2.15 p.m.
2	A. V. Roe and Co., Ltd.	Capt. H. A. Hamersley, M.C.	Avro "Baby," 35 h.p. Green	1 hr. 34 mins.	2.22 p.m.
3	Leth Jensen	Leth Jensen	S.P.A.D. "S.29," 80 h.p. Le Rhone	45 mins.	3.11 p.m.
4	F. S. Cotton	F. S. Cotton	D.H. 14A, 450 h.p. Napier "Lion"	40½ mins...	3.15½ p.m.
5	Lieut.-Col. F. K. McClean	Capt. W. L. Jordan, D.S.C., D.F.C.	Sopwith "Snipe," 200 h.p. B.R.2	28 mins. ..	3.28 p.m.
6	Major-Gen. The Rt. Hon. J. E. B. Seely Col. Ivan Davson Capt. Sir John C. E. Shelley-Rolls	Flight-Lieut. W. H. Longton, D.F.C.	Sopwith "Snipe," 200 h.p. B.R.2	28 mins. ..	3.28 p.m.
7	Flight-Lieut. J. S. T. Fall, R.A.F.	Flight-Lieut. J. S. T. Fall, R.A.F.	Sopwith "Snipe," 200 h.p. B.R.2	28 mins. ..	3.28 p.m.
8	A. V. Roe and Co., Ltd.	Capt. D. G. Westgarth-Heslam	Avro "Schneider," 230 h.p. Siddeley Puma	19½ mins. ..	3.36½ p.m.
10	The "Nieuport" and General Aircraft Co., Ltd.	John Herbert James ..	Nieuport "Nieuhawk," 320 h.p. A.B.C. Dragonfly	12 mins. ..	3.44 p.m.
11	Martinsyde, Ltd.	R. H. Nisbet	Martinsyde "F.6," 300 h.p. Hispano-Suiza	11½ mins. ..	3.44½ p.m.
12	Squad.-Leader T. O'B. Hubbard, M.C., R.A.F.	Squad.-Leader T. O'B. Hubbard, M.C., R.A.F.	Martinsyde "F.4," 300 h.p. Hispano-Suiza	10½ mins. ..	3.45½ p.m.
13	Sopwith Aviation and Engineering Co., Ltd.	H. G. Hawker	Sopwith A.B.C., 320 h.p. A.B.C. Dragonfly	9 mins. ..	3.47 p.m.
14	Bristol Aeroplane Co., Ltd. ..	C. F. Uwins	Bristol "Bullet," 450 h.p. Bristol Jupiter	7½ mins. ..	3.48½ p.m.
15	Martinsyde, Ltd.	F. P. Raynham ..	Martinsyde "Semi-Quaver," 300 h.p. Hispano-Suiza	1 min. ..	3.55 p.m.
16	The "Nieuport" and General Aircraft Co., Ltd.	L. R. Tait Cox	Nieuport "Goshawk," 320 h.p. A.B.C. Dragonfly	Scratch ..	3.56 p.m.

Officials

Judge

Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S.

Stewards

Air Vice-Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O.
Air Vice-Marshal A. V. Vyvyan, C.B., D.S.O.
Lieut.-Col. John D. Dunville.

Clerk of Course

Col. F. Lindsay Lloyd, C.M.G., C.B.E.
(Assistant, B. Stevenson).

Handicappers

Wing-Commander E. F. Briggs, D.S.O., R.A.F.
Squadron-Leader T. M. Barlow, R.A.F.
Squadron-Leader R. M. Hill, R.A.F.

Timekeepers and Starters

A. G. Reynolds.
T. D. Dutton.

Marshals

Howard T. Wright (Chief Marshal).
Capt. W. G. Aston.
Commander W. Briggs, R.N.
Lieut.-Col. W. A. Bristow
Major Ap. Ellis.
Flight-Lieut. V. Greenwood, R.A.F.
C. G. Grey.
Capt. W. E. Holland.
Capt. L. F. Jones.
Major J. H. Ledeboer.
Capt. J. M. MacAlery.
Major G. McCall.
Lieut.-Col. W. Lockwood Marsh.
Major R. H. Mayo.
D.W. Thorburn.
Major J. H. Tyler.
J. E. Withers.
Major W. E. de B. Whittaker.

Observers at Turning Points

A. J. A. Wallace Barr.
T. D. L. Brotherstone.
Capt. R. L. Charteris.
Major B. M. Dodds.
B. Faulkner.
Capt. C. L. E. Geach.
Henry Knox.
Capt. D. G. Murray.
Henry Webb.

Honorary Surgeon

Major H. Graeme Anderson, R.A.F.

Committee of Management

G. B. Cockburn.
Col. F. Lindsay Lloyd, C.M.G., C.B.E.
Air-Commodore E. M. Maitland, C.M.G., D.S.O., R.A.F.
Group-Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.

Organising Secretaries.

Bernard Isaac, Harold E. Perrin,

THE FLYING SERVICES FUND

(Registered under the War Charities Act, 1916)

Administered by the Royal Aero Club

For the benefit of *Officers, Non-Commissioned Officers and Men* of the ROYAL AIR FORCE who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

Committee :

H.R.H. THE DUKE OF YORK, K.G. (*Chairman*).
Lieut.-Col. A. DORE, D.S.O.
Mr. CHESTER FOX.
Squad.-Leader T. O'B. HUBBARD, M.C., R.A.F.
Group-Capt. C. R. SAMSON, C.M.G., D.S.O., R.A.F.

Honorary Treasurer :

The Right Hon. LORD KINNAIRD.

Bankers :

Messrs. BARCLAYS BANK, LTD., 4, Pall Mall East, London, S.W. 1.

Secretary :

H. E. PERRIN.

Subscriptions	£	s.	d.
Total Subscriptions received to June 28, 1920..	17,138	10	2
Major P. Litherland Teed (6th contribution) ..	3	3	0
Half the proceeds of a Charity Matinée given by the Flowerdown Amateur Dramatic Society, of Headquarters, No. 1 (T.) Wireless School, Winchester	6	12	10
Total, July 20, 1920	17,148	6	0

Offices: THE ROYAL AERO CLUB,
3, CLIFFORD STREET, LONDON, W. 1.
H. E. PERRIN, Secretary.

THE FIFTH AERIAL DERBY

THE fifth Aerial Derby—the second since the Armistice—which takes place on Saturday afternoon, promises to be one of more than usual interest, and the fifteen entries, as may be seen from the accompanying list, form, without exception, a very representative field. As usual, the start and finish will be at Hendon Aerodrome, but the course differs slightly from that of last year, the first turning point being altered to Brooklands, instead of Kempton Park, the other turning points remaining as before, viz., Epsom, West Thurrock, Epping, and Hertford. This course is to be covered twice, making a total distance of about 200 miles. Two prizes will be competed for, both given by the Royal Aero Club, one the "Aerial Derby" for the machine covering the course in the shortest time, the other a "sealed" handicap. The machines will start in the order of their handicap, the slowest machines starting first, and the winner being the machine first over the line.

The start takes place at 2.15 p.m., and judging from the crowds that attended the previous Aerial Derby and the recent R.A.F. Air Pageant, a "record" attendance is extremely probable on this occasion, so that an early start for Hendon is advisable if a good position and a minimum of discomfort are desired.

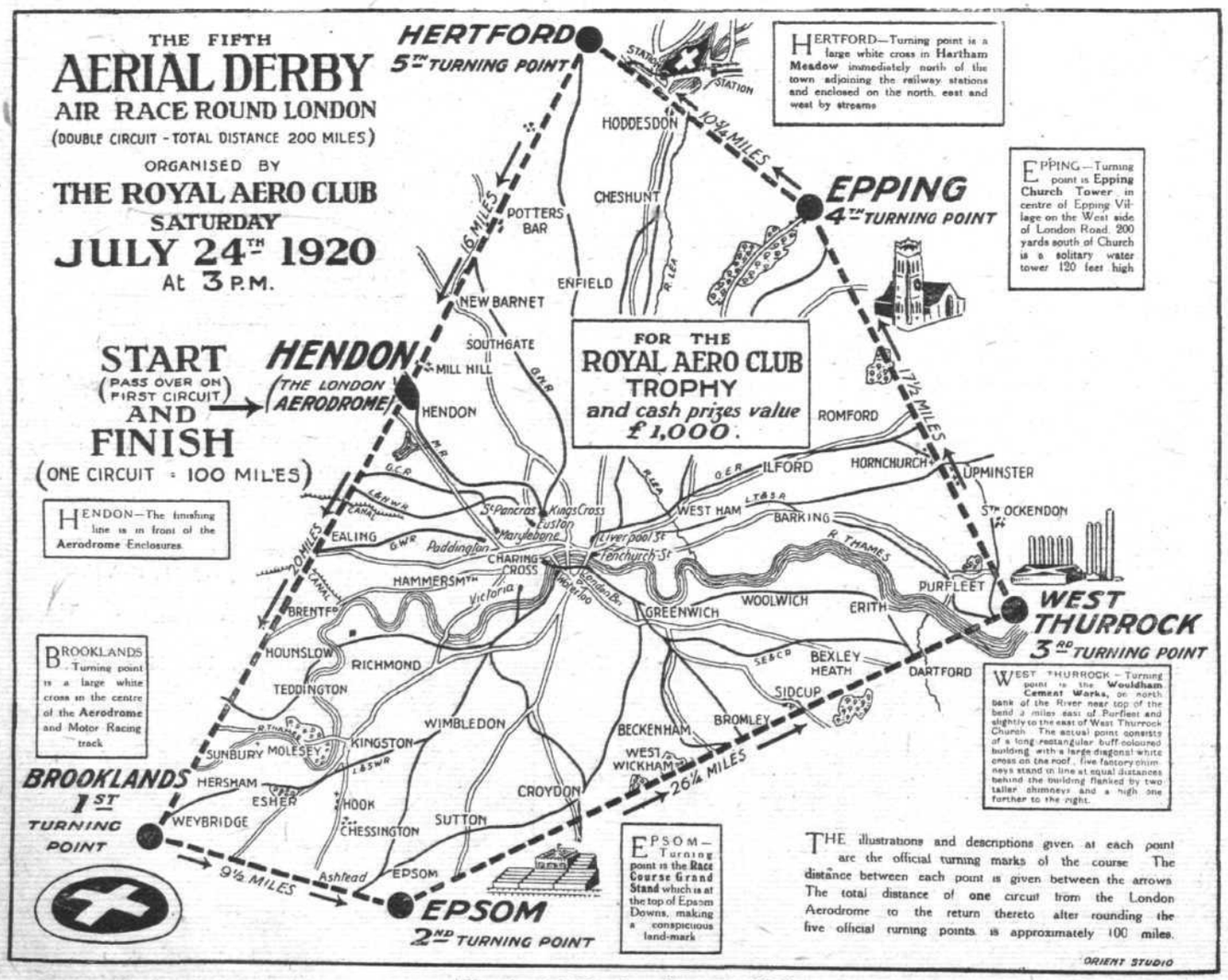
The various types of machines, ranging from the tiny "Baby" Avros, with 35-h.p. Green engines, to the Nieuport "Goshawk," with 320-h.p. A.B.C. "Dragonfly" engine, all have individual points of interest, and should be the means of providing a more than usual sporting and instructive character to the race. The Avro "Babies" need but little comment here, bearing in mind the performance of the "Baby" in last year's Derby and the recent London–Turin non-stop flight. Suffice it to say that Bert Hinkler will be flying the identical machine flown in the last-named event, whilst Capt. Hamersley's machine will be a similar but newer model. The Spad, flown by Leth Jensen—a Dane who did much good work in the French Air Service—is to all accounts a very promising machine with a good performance. The Airco 14A entered and flown by F. S. Cotton is, perhaps, the most interesting machine in the field, inasmuch as it is by no means a racer but a "cruiser," carrying pilot and three passengers and fuel for 18 hours, and having a range of 1,600 miles.

The three Sopwith "Snipes" all have the same handicap, and should, therefore, supply an interesting little race on their own. It is interesting to note, with respect to the pilots of the "Snipes," that Service pilots have been allowed to compete in this race for the first time. The Avro "Schneider," as its name implies, is the "land" version of the machine that had to "stand out" at the last Schneider Cup Race, and from the little we saw of it at work on that occasion, we should say it will put up a good show this Saturday. H. James (brother of the other one!) will be flying a similar machine to that flown in last year's Derby, and should make a good match with the next two machines, a Martinsyde F 6 (R. H. Nisbet) and a Martinsyde F 4 (Sqdn. Ldr. T. O'B. Hubbard).

The last four machines on the list may be said to constitute the favourites for first place, and the Martinsyde "Semiquaver" and the Nieuport "Goshawk" will undoubtedly provide some most exciting sport. Both held the world's speed record in succession, so we may certainly look for further records from one or the other.

From the official list of starters, given herewith, it appears that the machines will start at intervals corresponding to their handicaps, in which case the finish of the race should prove to be much more exciting than when they are started off at, say, one minute intervals.

Other features have been arranged to keep alive the interest of the spectators at Hendon. There will be several parachute descents, and in this there will be a novel descent made by "double parachute" where the "chutist" will jump over and descend so far with the one parachute, and will then release himself and fall away from the parachute until a second one opens and brings him gently to the ground. The well-known "Guardian Angel" parachutes will be used in all the descents.

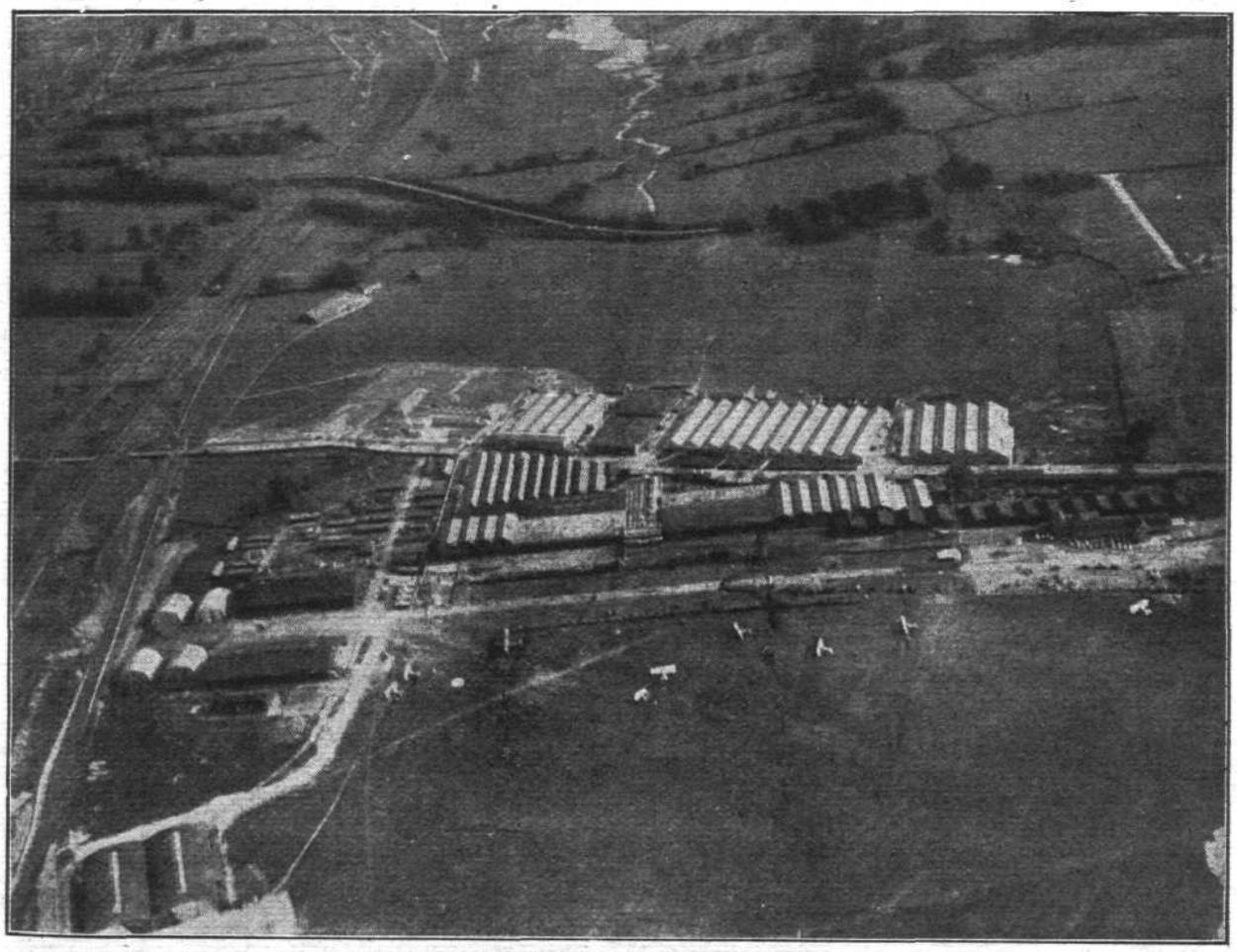


The Aerial Derby Course, 1920

AERIAL DERBY HANDICAP

Course 205 miles

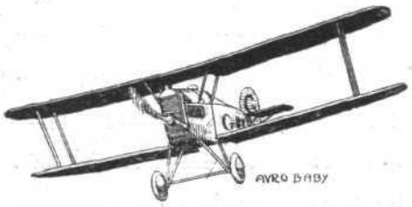
Competitors' Number.	Entrant.	Pilot.	Aircraft and Engine.	Handicap.	Starting Time.
1	Bert Hinkler	Bert Hinkler	Avro "Baby," 35 h.p. Green	1 hr. 41 mins.	2.15 p.m.
2	A. V. Roe and Co., Ltd.	Capt. H. A. Hamersley, M.C.	Avro "Baby," 35 h.p. Green	1 hr. 34 mins.	2.22 p.m.
3	Leth Jensen	Leth Jensen	S.P.A.D. "S.29," 80 h.p. Le Rhone	45 mins. ..	3.11 p.m.
4	F. S. Cotton	F. S. Cotton	D.H. 14A, 450 h.p. Napier "Lion"	40½ mins. ..	3.15½ p.m.
5	Lieut.-Col. F. K. McClean	Capt. W. L. Jordan, D.S.C., D.F.C.	Sopwith "Snipe," 200 h.p. B.R.2	28 mins. ..	3.28 p.m.
6	Major-Gen. The Rt. Hon. J. E. B. Seely Col. Ivan Davson Capt. Sir John C. E. Shelley-Rolls	Flight-Lieut. W. H. Longton, D.F.C.	Sopwith "Snipe," 200 h.p. B.R.2	28 mins. ..	3.28 p.m.
7	Flight-Lieut. J. S. T. Fall, R.A.F.	Flight-Lieut. J. S. T. Fall, R.A.F.	Sopwith "Snipe," 200 h.p. B.R.2	28 mins. ..	3.28 p.m.
8	A. V. Roe and Co., Ltd.	Capt. D. G. Westgarth-Heslam	Avro "Schneider," 230 h.p. Siddeley Puma	19½ mins. ..	3.36½ p.m.
10	The "Nieuport" and General Aircraft Co., Ltd.	John Herbert James ..	Nieuport "Nieuhawk," 320 h.p. A.B.C. Dragonfly	12. mins. ..	3.44 p.m.
11	Martinsyde, Ltd.	R. H. Nisbet	Martinsyde "F.6," 300 h.p. Hispano-Suiza	11½ mins. ..	3.44½ p.m.
12	Squad.-Leader T. O'B. Hubbard, M.C., R.A.F.	Squad.-Leader T. O'B. Hubbard, M.C., R.A.F.	Martinsyde "F.4," 300 h.p. Hispano-Suiza	10½ mins. ..	3.45½ p.m.
13	Sopwith Aviation and Engineering Co., Ltd.	H. G. Hawker	Sopwith A.B.C., 320 h.p. A.B.C. Dragonfly	9 mins. ..	3.47 p.m.
14	Bristol Aeroplane Co., Ltd. ..	C. F. Uwins	Bristol "Bullet," 450 h.p. Bristol Jupiter	7½ mins. ..	3.48½ p.m.
15	Martinsyde, Ltd.	F. P. Raynham ..	Martinsyde "Semi-Quaver," 300 h.p. Hispano-Suiza	1 min. ..	3.55 p.m.
16	The "Nieuport" and General Aircraft Co., Ltd.	L. R. Tait Cox	Nieuport "Goshawk," 320 h.p. A.B.C. Dragonfly	Scratch ..	3.56 p.m.



AT HENDON AERODROME: A corner of the 'drome, the works and the hangars

PORTRAITS OF PILOTS AND IDENTIFICATION DIAGRAMS OF MACHINES

No. 1



Pilot:
Mr. Bert Hinkler

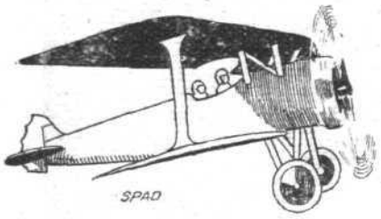
**No. 1. Avro Baby,
35 h.p. Green**

**No. 2. Avro Baby,
35 h.p. Green**

No. 2

Pilot:
Capt. H. A. Hamersley, M.C.

No. 3



Pilot:
Mr. Leth Jensen

No
Photograph
Available

**No. 3. S.P.A.D. S.29,
80 Le Rhone**

**No. 4. De H. 14a,
450 h.p. Napier**

No. 4

Pilot:
Mr. F. S. Cotton

PORTRAITS OF PILOTS AND IDENTIFICATION DIAGRAMS OF MACHINES

No. 5

Pilot:
Capt. W. L. Jordan, D.S.C., D.F.C.

No. 5. Sopwith Snipe, 200 h.p. B.R.2

No. 6. Sopwith Snipe, 200 h.p. B.R.2.

No. 6

Pilot:
Flight-Lieut. W. H. Longton, D.F.C.

No. 7

Pilot:
Flight-Lieut. J. S. T. Fall, R.A.F.

No. 7. Sopwith Snipe, 200 h.p. B.R. 2

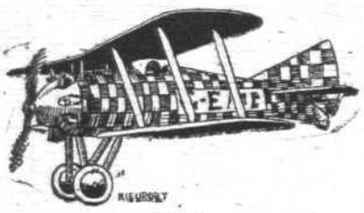
No. 8. Avro Schneider, 230 h.p. Siddeley Puma

No. 8

Pilot:
Capt. D. G. Westgarth-Heslam

PORTRAITS OF PILOTS AND IDENTIFICATION DIAGRAMS OF MACHINES

No. 10



Pilot:
Mr. J. H. James

No. 10. Nieuport Nieuhawk,
320 h.p. A.B.C. Dragonfly

No. 11. Martinsyde F. 6,
300 h.p. Hispano-Suiza

No. 11

Pilot:
Mr. R. H. Nisbet

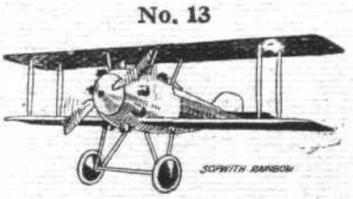
No. 12

Pilot:
Squad.-Leader T. O'B. Hubbard,
M.C., R.A.F.

No. 12. Martinsyde F.4,
300 h.p. Hispano-Suiza

No. 13. Sopwith Rainbow,
320 h.p. A.B.C. Dragonfly

No. 13

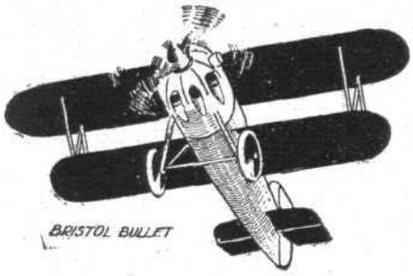


Pilot:
Mr. H. G. Hawker

FLIGHT

PORTRAITS OF PILOTS AND IDENTIFICATION DIAGRAMS OF MACHINES

No. 14



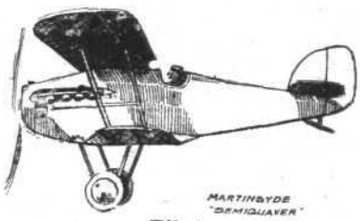
Pilot:

Capt. C. F. Uwins

No. 14. Bristol Bullet, 450 h.p. Bristol Jupiter

No. 15. Martinsyde Semi-Quaver, 300 h.p. Hispano

No. 15



Pilot:

Mr. F. P. Raynham

No. 16

Pilot:

Mr. L. R. Tait Cox

No. 16. Nieuport Goshawk, 320 h.p. A.B.C. Dragonfly

The French Competitions

OF the competitions which are being organised by the Service Technique de l'Aeronautique in France, that for motors has been again postponed to January 1, 1921, while the aeroplane competition is to start on August 15. The entries for the latter are from the Caudron, Breguet, Farman, Latécoére and Bleriot firms.

French Speed Range Competition

WHEN the competition for the "Grand Ecart" (greatest speed range) prize of 10,000 francs, offered by our French contemporary *L'Auto*, concluded on July 15, the best performance had been made by Bossontrot on a Farman Sports Biplane, and he therefore secured the prize. His winning performance, made on July 1, was minimum speed 23.411 kiloms. per hour, and maximum speed 139.896, giving a ratio of 5.9753. Second place went to Ed. Pillon, also on a Farman Sports model, with a ratio of 4.5980, and third to Casale, on a Spad-Herbemont, with 3.5276. In the landing competition the best performance was Pillon's 16 m. 60, Bossontrot's best being 19 m. 75 and Casale's 126 m. 15.

The U.S. Gordon-Bennett Team

THE Aero Club of America has now selected its team for the forthcoming Gordon-Bennett race in France. The three representatives are:—Air Service, United States Army aeroplane, pilot Maj. R. W. Schroeder; Aero Club of Texas, Curtiss plane, pilot to be named; Dayton-Wright Division of General Motors, pilot to be named.

Visitors from Denmark

Two Danish seaplanes landed at Felixstowe at 3.45 p.m. on July 14. They were piloted by Lieuts. Lichtenberg and Rasmussen, who left Copenhagen on the previous day, accompanied by two naval officers. The first portion of the journey—the longest undertaken by Danish aviators—was to Holland. A large crowd witnessed the landing at Felixstowe, and the visitors were subsequently entertained by the 230 Squadron R.A.F.

A NOVELTY IN AEROPLANE WINGS

THE War has proved that performance—that is, speed and, to a certain extent, climb—is chiefly a matter of loading per horse power. Commercial aviation is also, or will be in the future, a matter of loading per horse power—with this difference: performance was obtained by cutting down loading per horse power to the smallest attainable figure. The commercial aeroplane, on the other hand, will have to aim at carrying as great a load per horse power as possible for the sake of economy. This is an axiom to which we have frequently called attention in the columns of this journal. As in so many other things, a compromise has to be made between conflicting desiderata, and, in the case of commercial aircraft, this compromise will take the form of carrying a load somewhat smaller than the maximum power load possible in order to keep the speed up to certain commercial figures. Thus it is known that for a loading of 40 lbs./h.p. the maximum speed of the ordinary aeroplane is only about 60 m.p.h. Now a commercial aeroplane flying, for instance, between London and Paris, may frequently encounter a head wind of some 30 m.p.h. If the maximum speed of the machine is only 60 m.p.h. it would, therefore, take about eight hours to do the journey. This is obviously too slow to enable the machine always to beat the boat and train service on the score of speed. To do this successfully a machine of higher speed must be used. But higher speed means less load per horse power, hence a commercial compromise must be made, and it is obvious that the machine which, for a given speed, will carry the greatest load per horse power is the best commercial proposition.

A novel form of aeroplane wing, which appears to go a long step towards improving the economy of commercial flight, is just about to be introduced by the Commercial Aeroplane Wing Syndicate, Ltd., whose offices are at 34–36, Gresham Street, E.C.2. This wing, of which the aerodynamic data are given in the following table, is the outcome of many years of experiment and research, and although in its present form the wing marks a great improvement on the ordinary aerofoil for load carrying at moderate speeds, it does not, in the opinion of the inventors, represent the maximum attainable.

Tests at East London College on Alula

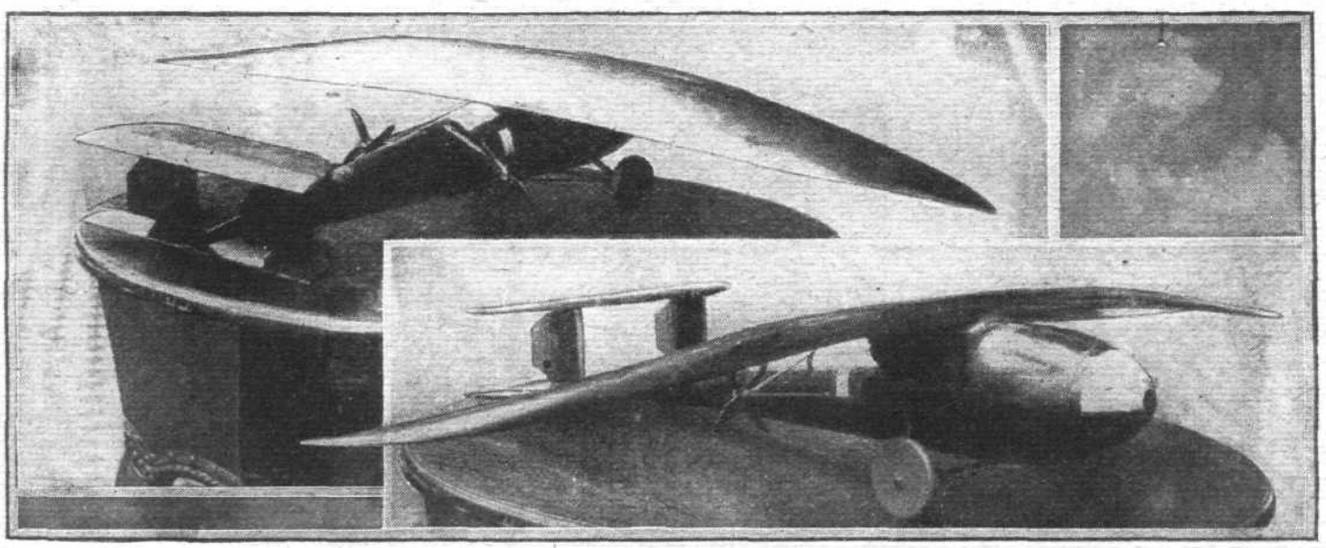
Wing No. 328·8 (*Double-arched Model*), 4 *ins. by* 36 *ins. at* 40 *ft. per sec.*

Angle of incidence, degrees	Lift coefficient	L/D	Centre of pressure coefficient	Angle of incidence, degrees	Lift coefficient	L/D	Centre of pressure coefficient
0	·191	7·0	·575	10	·660	21·8	·378
1	·241	10·5	·496	11	·709	20·9	·371
2	·290	13·3	·447	12	·761	19·85	·365
3	·338	15·8	·432	13	·799	18·8	·350
4	·386	18·3	·418	14	·823	17·5	·340
5	·432	20·6	·406	15	·827	16·1	·335
6	·476	22·2	·395	16	·822	14·6	·335
7	·521	22·85	·398	17	·814	12·9	·340
8	·566	22·9	·388	18	·800	10·8	·352
9	·621	22·5	·381	19	·784	8·6	·369

and we understand that very satisfactory results are being obtained.

A reference to the accompanying table will show that not only is the maximum lift coefficient unusually high, but the maximum L/D and the lift coefficient corresponding to maximum L/D are also extremely good. The maximum lift coefficient is ·827 and occurs at an angle of incidence of 15°. As the maximum lift coefficient of the ordinary wing is somewhere between ·5 and ·6 it will be seen that, for the same landing speed, the wing area can be reduced to about three-fourths that necessary with the ordinary wing. This is not the only, nor perhaps the greatest, advantage of the Alula wing, as it is called by the designers. The maximum L/D (to which scale correction still has to be added) is as high as 22·9, which compares favourably with the orthodox wing, and the lift coefficient corresponding to this maximum L/D is ·566, *or as high as the maximum lift coefficient of the average wing.* This, it will be seen, makes for economy of flight, especially in machines carrying a high load at moderate speeds.

It is not the intention of the Commercial Aeroplane Wing Syndicate, Ltd., to enter the constructing trade as competitors, but rather to issue licences for the use of Alula wings by aircraft manufacturing firms, and enquiries from *bona fide* constructors are invited. The wing, it might be added, can be used in machines of orthodox design if desired, and the general arrangement illustrated by our photographs is a suggestion by Mr. Booth of the Blackburn Technical Staff for one way of utilising the new wing. Time does not allow of a more detailed reference to the wing in the present issue, but we hope to return to the subject in a subsequent issue of FLIGHT.



Two views of a scale model showing application of an Alula wing

The accompanying photographs show a model wing of this series, from which some idea of the shape of the wing may be formed. The chief characteristics are the straight trailing edge, the negative dihedral leading edge, the deep camber, and the wash-out in chord camber and incidence towards the tip. In addition to the scale model wind tunnel tests, full scale experiments have been made for some time by the technical staff of the Blackburn Aeroplane & Motor Co., of Leeds, in order to determine the agreement between model and full scale work. These trials are still in progress.

M. Poulet in Batavia

M. POULET is back at Batavia in the Dutch East Indies, and on July 13, gave some exhibition flights on his Caudron, the proceeds to go to the fund for the benefit of Vedrine's family. He hopes to continue his flight to Australia next month.

The New York—Alaska Flight

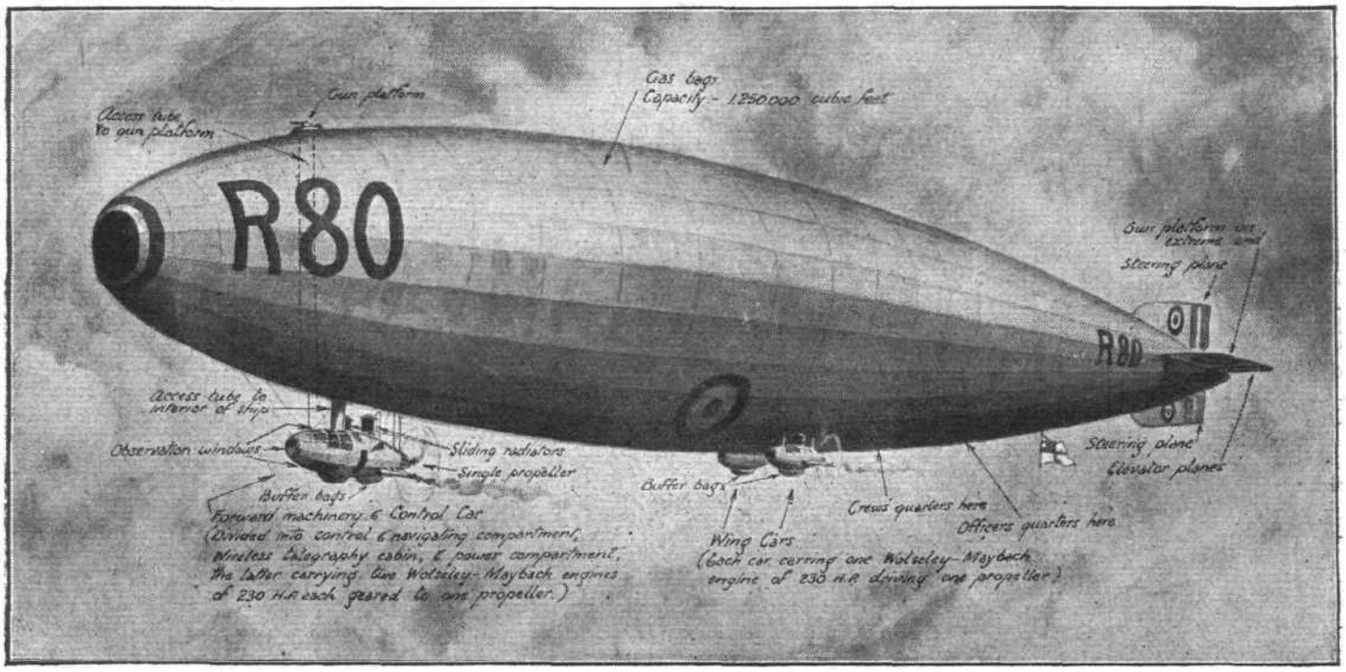
ALTHOUGH they started from New York on July 16, the 4 Dek machines, piloted by U.S. Army officers, were not able to progress very rapidly on their journey to Alaska, being held up for three days by thunderstorms at Erie, Pennsylvania.

THE "R.80" LAUNCHED

THE new Vickers rigid airship "R.80" was launched successfully on Monday last, July 19, and carried out a maiden cruise lasting just over 2¼ hours without a hitch. She was in charge of Capt. J. C. Little, the second in command being Capt. R. V. Goddard, with Capt. S. Harris as navigating officer and Lieut. S. Coleman as engineering officer. Capt. J. E. M. Pritchard accompanied the ship as representative of the Air Ministry. The crew mustered twenty-seven hands all told.

land hills, then went out over the Irish Sea and also cruised over Barrow. Some tests were carried out with the control gear and then the landing party was called up by wireless. Without the slightest hitch the airship came down and was safely housed.

The "R.80" is 535 ft. in length and 70 ft. in diameter, with a capacity of 1,250,000 cubic ft.; she is about 100 ft. shorter than the "R.34," the capacity of which is 2,000,000 cubic ft. On her trial, Capt. Little said the airship reached



The latest Vickers Airship R.80, launched on Tuesday this week at Barrow. *(Reproduced by courtesy of "The Times")*

In the morning a 15-knot breeze was blowing and it was deemed prudent to delay the trial until the afternoon when the wind dropped. At 3.35 p.m., Capt. Little ordered the airship to be drawn out from the shed on Walney Island, an operation which was completed in 2 mins. She was then brought round to face the wind and 20 mins. later at the sound of a trumpet the ropes were released and the "R.80" rose gracefully. Her aft port engine was started first and the airship soon developed speed. Skirting Walney Island, with her head to the wind, she steered towards the Cumber-

a height of 3,000 ft. and a speed of about 46 m.p.h. It is estimated that the speed with the four 240 h.p. Wolseley-Maybach motors when working all out will give her a speed of over 60 m.p.h. at which speed the airship has a range of 4,000 miles, while at a cruising speed of 50 m.p.h., she should be able to cover 6,500. The lifting power is given as 38 tons. From the sketch which we are able to reproduce by the courtesy of the Editor of *The Times*, it will be seen that a gun platform is arranged on top of the airship, and there is also a gun station at the extreme rear of the rigid framework.

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R.A.F. CHAMPIONSHIPS

AT Queen's Club, West Kensington, on Saturday, the championships of the Royal Air Force Athletic Association produced several good performances, and aroused keen interest. In the competition for the King's challenge cup, Uxbridge and Halton scored the same number of points (21), but as Uxbridge had supplied most individual winners they secured the custody of the trophy. Cranwell and No. 7 group came next with eleven points each, Howden compiled eight points. The Duke of York was present during the greater part of the afternoon. Her Royal Highness Princess Marie Louise distributed the prizes.

The winners were:—

100 *Yards Championship.*—Final Heat: Sgt.-Maj. F. Mawby (holder), Uxbridge., 10⅘ secs.

Putting the Shot Championship.—F.O. Maxwell, Halton, 33 ft. 10 in.

Half-Mile Championship.—Cpl. Still, Halton, 2 min. 7⅘ secs.

220 *Yards Championship.*—Sgt.-Maj. Mawby (holder), Uxbridge, 23⅘ secs.

High Jump.—Sgt.-Maj. Miller, Cranwell, 5 ft. 8¾ in. The winner afterwards cleared 6 ft. by way of exhibition.

220 *Yards Invitation Race.*—E. A. Osterlaak, South African Olympic Team, 22⅘ secs.

One Mile Championship.—Flight-Lieut. H. C. Irwin, Howden, 4 min. 33⅘ secs.

220 *Yards Boys' Race.*—Boy Jackson, Halton, 26⅘ secs.

Quarter-Mile Championship.—F.O. Wakefield, Uxbridge, 52⅘ secs.

Long Jump.—Sgt.-Maj. Miller, Cranwell, 20 ft. 7 in.

120 *Yards Hurdles.*—Sgt.-Maj. Mawby, Uxbridge, 17 secs.

One Mile Invitation Race.—J. Hatton, Surrey A.C., 4 mins. 32⅘ secs.

Three Miles Championship.—Flight-Lieut. H. C. Irwin, Howden, 15 min. 17⅘ secs.

One Mile Relay Race.—Halton, 3 min. 52⅘ secs.

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"Stunting" in Switzerland

EVIDENTLY the authorities in Switzerland have decided that prudence is the better part of stunting. At any rate, it is announced that henceforth Swiss airmen who want to do "stunts" will have to obtain a special licence, to have a very careful official examination of their machines made, and to insure themselves for £750.

A Dutch-Swiss Service

A SCHEME is being worked out for an air service by means of hydro-aeroplanes flying over the river Rhine, between Zurich and Holland, the initiative being taken by a Swiss

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concern. The French Government has been asked to instal a customs station on the Rhine near the Swiss frontier or at Strasbourg.

Art and the Air

IT is not surprising to hear that the exhibition of Mr. Geoffrey Watson's drawings and pictures at the Brook Street Art Gallery has proved so popular that it has been decided to keep it open for another week. This will afford an opportunity to those who have been kept too busy at Olympia of seeing this fine collection of aircraft pictures. The exhibition will now close on Wednesday, July 28.

THE FIRST HUNDRED

As mentioned in the brief note in our last issue the dinner to the pioneers of aviation, over which Maj.-Genl. Seely presided and which Wing-Commander H.R.H. the Duke of York honoured with his presence, at the Connaught Rooms on July 12, was a unique occasion, and those who carried the idea through are to be congratulated on the success of the function. It may be recalled that after the proposal had been put forward originally and dropped, the proprietors of *Aeronautics* resolved to assume the mantle. Their efforts met with such success that it was eventually decided to broaden the basis of the affair and to hand over the arrangements to a "Committee of Hosts," including: Maj.-Genl. the Right Hon. J. E. B. Seely, Lord Desborough, Lord Montagu of Beaulieu, Sir Herbert Austin, M.P., Sir Robert Hadfield, Bart., Sir Charles Wakefield, Bart., Sir Samuel Waring, Bart., Lieut.-Col. Alan Burgoyne, M.P., and Mr. Ernest J. P. Benn.

Of the first hundred pilots who secured their certificates in Great Britain, 75 survive to-day, their names being as follow, and of these the 46 whose names are preceded with an asterisk were able to accept the invitation :—

*Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Mr. A. Rawlinson, Mr. G. B. Cockburn, *Mr. C. Grahame-White, *Lieut.-Col. A. Ogilvie, *Sir A. M. Singer, K.B.E., Lieut. L. D. L. Gibbs, Maj. the Hon. Maurice Egerton, Mr. James Radley, *Capt. the Hon. Alan Boyle, *Mr. J. Armstrong Drexel, Squadron Leader G. C. Colmore, Mr. G. A. Barnes, *Wing-Commander G. W. P. Dawes, D.S.O., *Mr. A. V. Roe, *Mr. A. E. George, *Capt. R. Wickham, *Lieut.-Col. F. K. McClean, *Mr. E. K. Davies, Mr. Maurice Ducrocq, Brig.-Genl. J. G. Weir, *Capt. H. E. Watkins, *Mr. C. H. Greswell, Lieut.-Col. R. T. Snowden-Smith, Capt. H. Barber, *Mr. T. O. M. Sopwith, *Lieut.-Col. Sydney E. Smith, *Maj. A. R. Low, *Wing-Commander A. G. Board, C.M.G., D.S.O., *Mr. C. C. Paterson, *Mr. B. G. Bouwens, *Wing-Commander G. B. Hynes, D.S.O., Brig.-Genl. H. R. Cook, Mr. G. P. L. Jezzi, *Capt. O. C. Morison, *Mr. R. Macfie, *Capt. C. Howard Pixton, *Mr. H. J. Thomas, *Mr. E. V. Sassoon, *Capt. G. de Havilland, O.B.E., Lieut.-Col. D. G. Conner, Mr. J. V. Martin, Capt. A. H. Aitken, Mr. C. L. A. Hubert, Mr. G. H. Challenger, *Mr. G. R. S. Darroch, Mr. Archibald Knight, *Maj. W. H. Ewen, *Maj. Lewis F. Turner, Mr. W. R. Prentice, *Mr. E. C. Gordon England, *Maj. C. C. Turner, *Group Capt. C. R. Samson, C.M.G., D.S.O., *Group Capt. A. M. Longmore, D.S.O., *Brig.-Genl. F. Conway Jenkins, C.B.E., Commdr. R. Gregory, Brig.-Genl. E. L. Gerrard, *Wing Commander Harold Blackburn, M.C., D.F.C., *Mr. R. C. Kemp, Mr. R. W. Philpott, *Flight-Lieut. W. H. Dolphin, Mr. S. D. Massy, *Mr. F. P. Raynham, *Lieut.-Col. J. L. Travers, C.B.E., *Group Capt. T. C. R. Higgins, C.M.G., Wing Commander W. D. Beatty, Lieut.-Col. R. B. Davies, V.C., *Maj. H. R. P. Reynolds, *Maj. T. H. Sebag-Montefiore, D.S.O., M.C., *Wing Commander H. R. Busteed, C.B.E., A.F.C., *Maj.-Genl. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., Mr. G. Higginbotham, Mr. H. Stanley Adams, *Maj. J. W. Pepper, and Mr. H. Salmet.

The invitation was also extended to the following pioneers, who being British subjects were granted their certificates in France, and those marked with an asterisk were present at the dinner :—

Mr. W. E. McArdle, *Lieut.-Col. R. Loraine, D.S.O., M.C., *Mr. Somers Somerset, Mr. H. G. Melly, Mr. H. J. Harding, Mr. E. Archer, Mr. C. R. d'Esterre, Lieut.-Col. C. J. Burke, Mr. E. A. Paul, Mr. John Weston, and Mr. G. E. T. Woodward.

An impressive feature of the proceedings was a silent toast to the memory of the pilots, as well as other pioneers, who have passed away. These were :—

Of the First Hundred Pilots.—The Hon. C. S. Rolls, Mr. Cecil S. Grace, Mr. S. F. Cody, Maj. J. D. B. Fulton, Mr. L. F. Macdonald, Mr. J. J. Hammond, Mr. R. C. Fenwick, Maj. H. F. Wood, Mr. St. Croix Johnstone, Mr. B. H. Barrington-Kennett, Mr. R. A. Cammell, Mr. James Valentine, Mr. H. J. D. Astley, Mr. C. P. Pizey, Mr. Louis Maron, Mr. Gustav Hamel, Mr. Quinto Pogglioli, Mr. H. R. Fleming, Lieut. W. Parke, R.N., Mr. E. V. B. Fisher, Mr. Hubert Oxley, Mr. C. H. Marks, Mr. E. Hotchkiss, Mr. B. C. Hucks, and Mr. C. Gordon Bell.

Other Pioneers.—Mr. E. T. Busk, Capt. W. B. Rhodes-Moorhouse, V.C., Mr. Laurence Hargreaves, Mr. D. G. Gilmour, Mr. R. T. Gates, Commdr. Neville Usborne, R.N., Sir Hiram Maxim, Maj. F. W. Goodden, Mr. Horace Short, Mr. W. Rowland Ding, Lieut.-Col. C. M. Waterlow, Mr. R. H. Barnwell, Lieut.-Col. C. F. Pollock, Mr. José Weiss, Mr. Cedric Lee, Lieut.-Col. John Cyril Porte, and Professor Huntington.

In addition to the survivors of the first hundred pilots, invitations were sent to rather more than a hundred persons, whose pioneering activities were not confined to piloting although in some cases they possess pilot certificates. Their names were as follow, although not all were able to be present.

Mr. Patrick Y. Alexander, Capt. W. G. Austin, Miss Gertrude Bacon, Mr. W. L. Bairstow, Capt. F. S. Barnwell, O.B.E., Dr. Graham Bell, Mr. Robert Blackburn, Mr. Griffith Brewer, Mr. G. Blondeau, Dr. Barton, Maj. B. Baden-Powell, Mr. N. Pemberton Billing, Mr. F. Hedges Butler, Mr. G. Bradshaw, Sir Charles Bright, Professor G. H. Bryan, Mr. E. Bucknall, Mr. H. M. Buist, Col. A. D. Carden, Maj.-Genl. Sir J. E. Capper, Mr. R. O. Cary, Mr. R. L. Charteris, Mr. T. W. K. Clarke, Mr. G. L. O. Davidson, Mr. J. W. Dunne, Capt. G. M. Dyott, Lieut.-Col. J. Dunville, Lieut.-Col. H. R. Delacombe, Mr. Henry Farman, Mr. L. Howard Flanders, Mr. Henry Ferguson, Mr. E. P. Frost, Mr. C. R. Fairey, Maj. F. B. Fowler, Col. J. D. Fullerton, Maj. O. T. Gnosspelius, Dr. Glazebrook, Mr. Percy Grace, Mr. C. G. Grey, Lieut.-Col. Spenser D. Grey, Mr. E. V. Hammond, Mr. F. Handley Page, Mr. G. Handasyde, Mrs. Maurice Hewlett, Mr. G. Holt-Thomas, Lieut.-Col. T. O'B. Hubbard, Mr. Bernard Isaac, Maj. H. Jullerot, A.F.C., Mr. Henry Knox, Mr. F. W. Koolhoven, Mr. A. A. Dashwood Lang, Mr. F. W. Lanchester, Mr. J. H. Ledeboer, Brig.-Genl. G. Livingstone, Mr. Herbert Lloyd, Mr. J. D. McCurdy, Air Commodore E. M. Maitland, Mr. W. O. Manning, Mr. Fred May, Mr. H. P. Martin, Mr. F. W. Merriam, Mr. Louis Noel, Lieut.-Col. Mervyn O'Gorman, Major Henry Petre, Mr. Horatio Phillips, Mr. N. S. Percival, Lieut.-Commander H. E. Perrin, Professor Sir J. E. Petavel, Mr. G. Tilghman Richards, Mr. H. V. Roe, Mr. D. Lawrence Santoni, Capt. W. H. Sayers, Mr. Eustace Short, Mr. Oswald Short, Mr. F. Sigrist, Mr. J. H. Spottiswoode, Mr. Herbert Spencer, Mr. T. P. Searight, Maj. S. V. Sippe, Mr. Stanley Spooner, Dr. Thurston, Mr. R. Turnbull, Col. Templer, Mr. R. W. Wallace, Mr. E. T. Willows, Mr. Howard T. Wright, Mr. H. White-Smith, Sir Stanley White, Bart., Capt. W. E. de B. Whittaker, and Capt. W. Windham.

The chair was occupied by Maj-Genl. Seely, H.R.H. the Duke of York sat on his right, and amongst those also at the head table were : Viscount Burnham, Capt. Wedgwood Benn, Sir James Currie, Mr. J. L. Garvin, Maj. Carlo Graziani, Italian Air Attaché ; Maj. Melvin Hall, U.S.A. Air Attaché ; Maj.-Genl. Matsuo Itami, Sir William Joynson-Hicks, Bart., M.P., Lord Lee of Fareham, the Marquis of Londonderry, Lieut.-Col. Moore-Brabazon, Air-Marshal Sir Godfrey Paine, Commander Sablé, French Air Attaché ; Admiral of the Fleet Sir E. H. Seymour, Lord Sydenham of Combe, Maj.-Genl. Sir F. H. Sykes, Air-Marshal Sir Hugh M. Trenchard, Mr. H. G. Wells.

After the toast of "The King" had been submitted and accorded musical honours, the Chairman proposed the toast of "The Queen, Queen Alexandra, the Prince of Wales and other members of the Royal Family," coupling with it the name of the Duke of York. He expressed the gratification of the company at the presence of His Royal Highness, who took such a deep and peculiar interest in aviation and had set such a good example to the young men of the country.

His Royal Highness the Duke of York, in reply, said : "It is, I can assure you, a very great pleasure to me to be here this evening and to reply to the toast of 'The Royal Family' which you, Mr. Chairman, have so warmly and kindly proposed. I thank you for the far too generous words that you have used about myself, and I appreciate greatly the cordiality with which the company have received your remarks. I am glad to be present on such a unique occasion as to-night, when we are assembled here to do honour to the first 100 gallant pioneers of British aviation. It has needed the rapid evolution of aerial warfare for us to appreciate the intrepid heroism of the early pilots, who, in primitive machines, tended by the then unskilled mechanics with no past experience to guide them, and, may I add, with not a vast deal of encouragement from anyone, solved the problem of flying and sowed the ground for the great harvest of progress which the forcing power of the war caused us to reap.

"I am a very indifferent pilot, but I know I have flown sufficiently to realise what difficulties had to be overcome by these men, and what courage was needed to surmount them, because I cannot deny that even in a well-tuned and well-tested machine, after a course of instruction from a very experienced pilot, and thus with the margin of danger reduced to a minimum, there have been occasions when I was very glad to get down on my own feet, and I take off my hat to our honoured guests to-night for their pluck. The foresight and initiative of our first 100 pilots made it possible when the great

war broke out for Britain to overtake, and eventually surpass, our more ready and better prepared enemy, and to gain finally the wonderful air supremacy we possessed at the time of the armistice, and which I trust we will never lose. I feel we, as a nation, owe these men and women a very large meed of thanks for the pioneer work they carried out in a matter of such national importance at such a heavy personal risk, and I am proud to have the privilege of meeting them and glad to have the opportunity of paying them a small part of the great honour due to them. Once more I say I thank you."

A silent toast was dedicated to "the glorious memory of those who laid down their lives to give the Empire her place in the air."

Lord Desborough in proposing "The Pioneers of British Aviation," recalled some of the efforts made by himself and others before the War to attract public attention to the importance of flying. He also referred to the work of the Imperial Air Fleet Committee, which set out with the idea of giving to each self-governing British Dominion the nucleus of an Air Fleet.

Capt. Wedgwood Benn, D.S.O., D.F.C., M.P., supported the toast in a very witty speech, in the course of which he said:

"There is great romance in the early history of the air. Just as Leander swam the Hellespont to reach Hero's caresses, Blériot flew the Channel to gain a kiss from his own wife. Lebaudy from an airship became Emperor of the Sahara. It is to be recorded that in the early stages the nomenclature of aviation somewhat lacked precision. Many who saw 'Nulli Secundus' enquired in a puzzled way after the 'Nulli Primus,' and confidently and vainly anticipated the advent of the 'Nulli Tertius.' Then the terminology of the early pilots was, to say the least of it, sloppy. They would talk of bumps and pitching when, of course, they merely meant anabatics or katabatics, or peradventure nothing more serious than a phugoid oscillation. When they talked of gadgets they really referred peradventure to an ombrometer or a paranthelion. There is no small importance, after all, in a dignified terminology. The poor widow woman whose man had been hanged was accustomed to refer to the incident in these words: 'Yes, my pore 'usband fell through a trap-door whilst talking to a clergyman.' Philosophers have often pointed out how great a part chance has played in the history of the world. John Hampden nearly emigrated to the States. The painter, Whistler, would have entered Sandhurst if he had not failed in chemistry, and said on enquiry, 'If silicon had been a gas, madam, I should have been a soldier.' The toss of a coin actually decided who was to be the first human being to fly, and so it was that Orville and not Wilbur Wright left the ground at Dayton nearly seventeen years ago. But the lead secured by America was soon hotly contested by our French allies and ourselves, and now we hope to hold it unchallenged. Some of those who gave us this great gift are here to-night, but many we can only honour in remembrance. Those pioneers of twelve years ago builded better than they knew. They worked without the stimulus of battle. No doubt incredible things were achieved under the urgent spur and the flagrant incentive of war, when life and treasure were held cheap and honour very dear. Nor can we forget that we are not an island unless we can maintain the freedom of the air. All this is undoubtedly true, but I think we should utterly lack perspective if we regarded the work of the pioneers of aviation merely as preparation for that or for any war. To what can we compare their success? Steam or the compass? They merely directed and facilitated locomotion in the element which was man's own. Flying launched him into a new element. To match it we must go back into the mists of the world's infancy to find the man who first floated on the surface of water or invented the wheel or gave fire to the children of men. Flying is the greatest civilising agent that has ever been known. Civilisation is merely the assimilation of differences. The greatest cause of differences is space. Architecture, language, manners and morals are all founded on geography. Flying annihilates space, and in doing so will ultimately make the world one family. The men who fought the early battles needed patience and faith. Patience to front official neglect and the ridicule of the mob, and Faith, which is the substance of things hoped for and the evidence of things not seen.

"Let us now praise famous men.

"Some are living; some have left a name behind them, that their praises might be reported, and some there be which have no memorial.

"Their name liveth for evermore."

Lieut.-Col. J. T. C. Moore-Brabazon, M.P., who holds the Royal Aero Club's pilot certificate numbered 1, said he had some difficulty in replying to the toast because he was speaking for others. He knew he would be expected to say they were all aware what splendid people the authorities were, but he was going to put the soft pedal on that and say nothing of the sort. Before he came there he had looked through a list to see what rewards had been given to aviators, and except for their friend, General Sykes, who was a General in the war and got honours for pioneer work and in the war zone, he thought they could justifiably complain at the treatment in general that had been meted out to the pioneers of this great science. However, he knew he was speaking for them all when he said they were not discontented; but it was a discouragement to pioneers in other work when they looked at what had been done for the pioneers in aviation. He wanted to get back in his remarks into the atmosphere of some thirteen years ago. The difficulty and incredulity one met with at the time was hard to visualise at the present time. It was only thirteen years ago that his friend Mr. Short, who was present this evening, built an aeroplane for him.

He and his friend Mr. Roe went down to Brooklands, which was not open even as a racecourse then. One might think they were looked upon with enthusiasm by some people, but nothing of the sort; people came long distances to see a couple of aerial lunatics; and although their machines had a small chance of ever leaving the ground, he remembered Mr. Roe's chief worry was not how he was going to get his machine off the ground, but how he was going to find his way to Manchester. While Mr. Roe was under the impression that the people came to see his machine, he always suspected that they came to see them, and that they thought they were very curious people. Optimism in those days was wanted more than any other trait.

He wanted to draw attention to one or two of those who worked in the early days whose names were not so well known as they ought to be. One man ought to be known and honoured by everybody, not only because he was a pioneer, but also a great patron of the art. That was Frank McClean. If it had not been for him the Aero Club would not have had the early aerodrome which had helped them so much. It would not have been forgotten by the Board of Admiralty how McClean at his own expense, and helped by Cockburn, instructed the first four naval aviators. He felt he should remind the Army Council that members of the Aero Club offered the Army Council two aeroplanes, and were met by the reply that the Army Council saw no future in aviation from a military point of view. That should be written in letters of gold in the room of the Air Council, lest they should ever suffer from Red Tape. When he read of wonderful flights today—and he honoured those who did them—and looked back on those of earlier days, he could not believe the later achievements were more remarkable than that done by Tommy Sopwith from the East Coast to the middle of Belgium ten years ago; or Mr. Grahame-White's glorious failure at Manchester. Unless one knew the difficulties of those days, one could not appreciate the magnitude of the task they took on. He would pass to one of the lesser lights. Probably few of those present had heard his name. He wondered if they knew the name of Jezzi? He arrived at Eastchurch with a bundle of calico under one arm and an old packing-case under the other, and an old motor-bicycle engine on his back, and in a few months he had built a machine that was flying round the aerodrome, and got its licence. Nothing was more creditable than the performance of that man. He felt that he was speaking for all the pioneers when he said they would not exchange their experience for anybody else's in aviation. They had no regret, except the friends they had lost for ever. In those old days they had nothing to guide them, no N.P.L., no experience. He remembered having a long discussion with Gabriel Voisin as to whether a side control was necessary or not, but when he turned a somersault and arrived on his back that convinced him a little. In those days there was such a narrow margin of lift that one went without breakfast to save weight. What would a modern pilot think if put into a machine with no side control, no stabilising planes, the rudder in front, and shot off a rail like a shuttle-cock? That was the way they lost their aeroplanes in those days. He maintained that pioneer work had only just started, and that there was more to do today than they thought possible ten years ago. Aviation stood apart from the life of the ordinary man in the street, and they had to see that it played more part in his life, and that when he thought of going from place to place he must naturally think of the aeroplane as one of the alternative means of transit.

He did not believe the future of aviation depended entirely on the military side. He thought it had an enormous future on the commercial side. Mr. Churchill said in the House of Commons recently, "Civil aviation will fly by itself." He had no doubt of that, but when would it start flying by itself? He did not want it to be like the albatross, which could no

leave the ground without a puff of wind. They must give civil aviation that puff of wind to start it. No pioneer ever lived in the past. He always lived in the future, and he hoped all those present would take as much part in the future of aviation as they had taken in the past.

Maj.-Genl. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., also replied to the toast, but said Col. Moore-Brabazon had put the matter so well that it was difficult for him to add anything. His (General Sykes') work as a pilot was a very small thing. If he had any claim to attention it was only that he was in aviation at the beginning, and he would like to say a few things with which he hoped the real pioneers in the hardest work would agree. When he saw around him friends of these old days he felt that an almost impossible task was imposed upon him. He referred to Roe, Sopwith, Ogilvie, Loraine, Jullerot, and one of the best pilots of the time, Samson, who started the Naval Wing, Brooke-Popham, Maitland, Longmore, and many others. He agreed with Col. Moore-Brabazon that it was to civil aviation they had to look for help in this big movement. Last year he was asked to try and help from the civil aviation point of view, and it was a proud moment for him. They were, as Col. Moore-Brabazon had it, only at the beginning of things. He did not think anyone could have any doubt with regard to the future of aviation. The trouble before the war was that the knowledge of aviation was not widely enough dispersed. There was not sufficient belief amongst the public, not sufficient driving force from public opinion. He believed if they carried on the pioneer work which the original people who took up aviation did and believed in, and did not cease morning, noon or night, they would carry through this great development in the future as they had done in the past.

Viscount Burnham, in proposing "Greetings to our confrères abroad," said facts were generally brutal and disheartening things; but in the case of aviation there was no disheartenment because fact was greater and stranger than fiction. From the first aviation had had a good Press. It had had no warmer advocate and supporter than his friend and colleague, Lord Northcliffe. He had been asked to move a resolution in the following terms :—

"This assembly of the survivors of the first hundred British aviators, and the pioneers of British aviation, send cordial greetings to their United States, French, Italian, Belgian, and Portuguese confreres, and desire to make united acknowledgment of the glorious achievements of the United States, France, Italy, Belgium, and Portugal in the conquest of the air."

General Smuts had said, in a well-remembered phrase, "Mankind has struck its tents, and is now on the march." He might have said more truly, "Mankind was now in the air." They had their heroes and their martyrs in the great enterprise. They had blazed the trail, if he might use the metaphor, when they led the armies in the war. They all knew that flying was in its infancy, and they were told, moreover, that it was going to change not only the conditions of living but the conception of life, and that before very long. Those assembled knew perhaps better than he did what we owed to the pioneers in aviation, especially in France and the United States, and he was sure that all present would give them honour for the enormous services they had rendered to the Allied cause. One great step in advance was that the twenty-three States now entered into the international convention promised much for the future development of aircraft and the air services. If the Air Service was to be all it should be they must hold together in the moving times ahead. He coupled with the toast the names of Commander Sablé, the French Air Attaché, and Major Melvin Hall, the United States Air Attaché.

Commander Sablé (Air Attaché, French Embassy), in reply, expressed his deep appreciation of the tribute, and in return spoke of the devotion of the British pioneers.

Major Melvin Hall said he seconded the response to the toast with great humility, as he thought himself unworthy to represent his countrymen before such a gathering. But though his active connection with aviation only extended over a few years, his interest in it went back to some seventeen years ago, when he saw Wilbur Wright wandering round a field in a contraption tied up with string, and which had in its construction paper and drawing pins, before a sceptical audience. There were three separate periods of stimulus that affected the industry or science in America. The first was when the men who had flown here took up what he was proud to say one or two of his countrymen started. Yet he took that back, because he did not think any one country could claim men like Wilbur and Orville Wright. As General Sykes had said, aviation was international, and they were very proud that they came from America, and prouder to assure others who had carried on the work that the first stimulus in America came from those gallant gentlemen who went across to show Americans what they were doing, and whose names were known throughout America today. America had not for a time followed up the lead that men like the Wrights had given them, and when they came into the war, the stimulus came largely from others who showed them how to win the war in the air. He took pride in doing honour not only to the pioneers but to the men connected with the aircraft industry, and the service of aviation in England, who showed the Americans the way, and sent over their best men to train them, and gave them their material even so far that they themselves were short, and gave them an untiring example which they were proud to emulate. Aviation in America had suffered from the same infantile diseases which he believed affected it over here. He believed they were now getting on a sounder basis. They had great stretches of country, and he thought the future of aviation in America would perhaps follow in the footsteps of the motor industry. Motor-cars were at first looked upon as toys, but as the development of the motor-cars went on, the development of suitable roads went on, and they were now starting trying to induce municipalities to build aerodromes, and hoped this would stimulate aviation in the same way as the building of roads stimulated the motor industry. He assured British aviators that anything they had in America was at their disposal, and they believed that the future of aviation depended on the interchange of ideas, experience and experiments of scientists and pioneers, coupled with a certain amount of healthy competition.

Mr. J. L. Garvin, who proposed the toast of "The Future of Aviation," said he felt a considerable sense of trepidation at having to deal in five minutes with the most important subject ever entrusted to a speaker. If the future of aviation could not be more glorious than its past it would be larger. To speak of the future of aviation was to speak of the future of the world. Aviation had realised the greatest and most daring of human dreams through thousands of years. As regarded its future all he could say was that nothing in civilisation, moral or material, would be the same again. Aircraft must be more to us in the future what sea power had been in the past. The development of civil aviation was bound to follow military aviation. Secondly, aircraft was a new and heaven-sent means of bringing into closer and more beneficent union the Empire that was saved in war, and it was his conviction that the concord between Britain and America would grow even stronger. In aviation they had a most compelling means towards the establishment and working of a League of Nations. The future of aviation must lie between closer and more rational co-operation and a more definite chaos, and he believed that the machines of the future would not be the legions of terror.

Mr. H. G. Wells, in supporting the toast, said no State, unless it was the United States of America, could be self-sufficient in the air. The control of air navigation must be international, and the exploitation of the air must be international. Until that could be realised aviation must remain very much where it was today. On the Civil Air Transport Committee there were occasional talks of all-red routes. There were no all-red air routes. Let them look at the map of Europe. There was no way out of these islands except over foreign territory. The nearest red point to us on the map of Europe was Gibraltar. The man who would make an air station of the neck of Gibraltar was the sort of man who would try to sit down comfortably on an upturned tin-tack. Aviation had got all it was likely to get out of war. Its one hope was peace. The next stage in the development of aviation had to be a political stage.

Lord Montagu of Beaulieu replied. He stated that most of the prophecies about aviation had come true. In his humble judgment, the airship was going to be the long-distance aircraft. It was not generally known that during the war over 1,000,000 miles were flown by airships. There had been few failures and the record was wonderful. By international agreement we should be able to fly over any country. He hoped we would soon see freedom in the air recognised among the nations of the world, as was freedom of the seas. The airship was only at the beginning of its career. He was certain that the future of sea and air craft would be wholly beneficial to the world. The nations of the world had only to know each other a little better and to minimise the difficulties of friction in order to lessen the chances of war.

The Marquis of Londonderry expressed appreciation of the hospitality of the hosts, to which Maj.-Genl. Seely responded.

Following the singing of the National Anthem, there were given three cheers for the King, and another three cheers for the Duke of York.

FLIGHT

AIR MINISTRY COMPETITIONS, 1920

THE Air Ministry has announced that the following is the complete list of entries for the Air Ministry Competitions. The competitions for large and small aeroplanes are to commence at Martlesham Heath, near Ipswich, on August 3, while that for amphibians will be held partly at Martlesham and partly at Felixstowe, commencing on September 1:—

Large Aeroplanes

1. Aircraft Manufacturing Co., Ltd.
2. Central Aircraft Company.
3. Handley Page, Ltd.
4. Vickers, Ltd.

Small Aeroplanes

1. Austin Motor Co., Ltd.
2. William Beardmore and Co., Ltd.
3. Bristol Aeroplane Co., Ltd.
4. Petters Ltd. (Westland Aircraft Works).
5. A. V. Roe, Ltd.
6. Sopwith Aviation and Engineering Co., Ltd.

Seaplanes (Amphibians).

1. William Beardmore and Co., Ltd.
2. Fairey Aviation Co., Ltd.
3. S. E. Saunders, Ltd.
4. Supermarine Aviation Works, Ltd.
5. Vickers, Ltd.

The following instructions to competitors have also been issued officially. The references (A.M.C.) in brackets refer to the conditions of the competition, which were reproduced in FLIGHT of April 22 last:—

GENERAL INSTRUCTIONS TO COMPETITORS

1. Competing machines may arrive at Martlesham Heath on—

July 31, 1920—large and small aeroplanes.
August 31, 1920—seaplanes (amphibians);

but in any case **must be at that aerodrome** on—

August 3, 1920—large and small aeroplanes.
September 1, 1920—seaplanes (amphibians).

2. Trial flights may take place before any individual machine begins its tests. But as soon as it has commenced its tests no further trial flights will be permitted, except by special permission of the Judges' Committee in writing. (Aerodrome rules must be strictly observed by competitors making trial flights.)

3. Competitors will notify the Judges' Committee in writing at least one hour before they intend to demonstrate their compliance with any of the tests, stating which test is contemplated, except in the case of Aeroplane Tests 7 and 8 and of Seaplane Tests 7 to 14, of which due notice will be given by the Judges' Committee when these shall be complied with.

4. A reasonable period based on the amount of suitable weather for flying experienced will be allowed by the Judges' Committee for the carrying out of these tests.

5. On the completion of each test by a competitor he will receive a certificate to that effect signed by the Secretary of the Judges' Committee.

6. The Judges' Committee will display a red flag at all times when flying is in progress, and in addition will display a white flag when the wind is over five m.p.h.

7. The log books of any competing machines shall be liable to inspection by the Judges' Committee at any time during the competition.

8. A small amount of dead-weight will be available for use of competitors if required. **But competitors, especially those entering large machines, should provide themselves with dead or live weight up to the amount required for full load.**

9. Competitors' own transport will be accommodated in the station transport yard free of charge **at owner's risk,** but no personnel will be available to attend to it. Motor spirit and oil may be obtained on repayment from the O. i/c Transport.

10. All applications for aviation spirit and oil (which are supplied free to competitors), personnel to assist in moving machines, etc., the use of workshops, etc., shall be made **in writing**, signed by the competitor or his representative, to the O.C. Station.

11. No competition flying will take place on Sundays.

Additional Instructions to Competitors—Seaplanes (Amphibians) only

12. Sectional drawings of the boat or float structures will be submitted by competitors for inspection at the request of the Judges' Committee.

13. All seaplanes (amphibians) will be housed at Martlesham Heath throughout the trials, except in the event of damage being sustained while afloat, in which event Felixstowe Seaplane Station will provide, if necessary, suitable accommodation.

14. Tests 1 to 6 will be carried out at Martlesham Heath. The land and sea portions of Test 7 will be carried out at Martlesham and Felixstowe respectively, and will entail flights between those places. Tests 8 to 14 will be carried out at Felixstowe.

Large and Small Aeroplanes

Order of Trials and Procedure

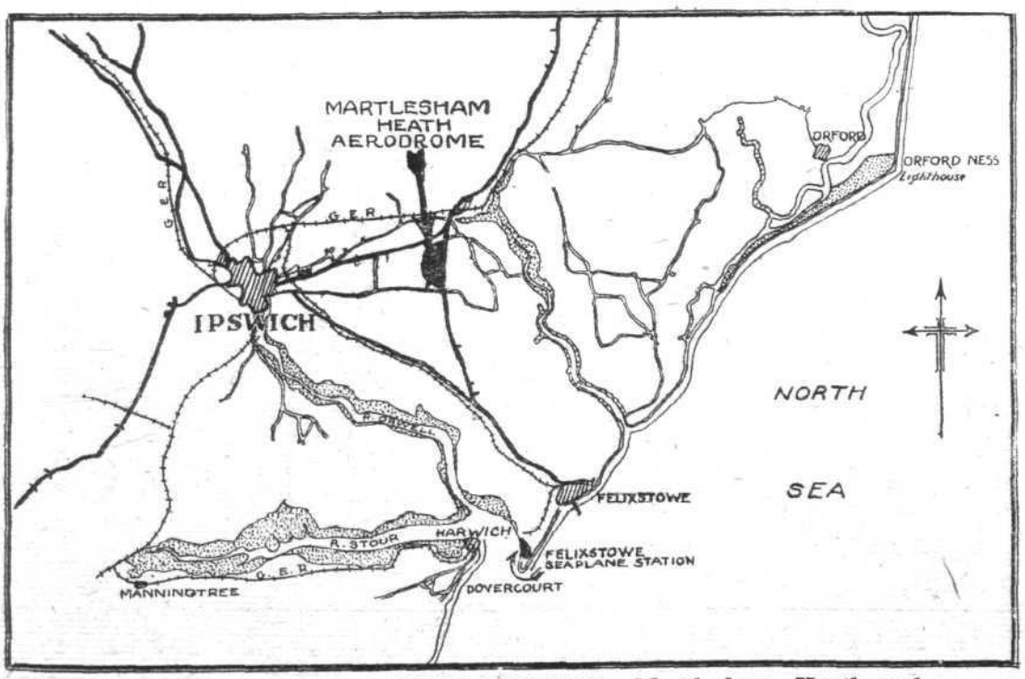
The trials of each aeroplane will be carried out in the following order:—

1. **General Examination.** (To include A.M.C. Form A, paras. 3, 4, 5 and 19, and suitable sub-sections of para. 18).—Machine will be weighed empty and examined in detail by the Judges' Committee.

2. **High and Low Speeds.** (A.M.C. Form A, para. 7.)—Machine will be fitted with a recording barograph, a statoscope, a thermometer (supplied by the Judges' Committee) under the supervision of the A.M. Technical Staff. An official observer will be carried. Machine will fly over the speed course twice each way at a height of 4,000 ft. for each speed, and the necessary corrections will be made for windage. (The course to be taken is shown on the map of the Aerodrome.) Small aeroplanes may be permitted alternatively to perform their high speed tests at ground level (*i.e.*, 20 to 50 ft.) over the speed course on application in writing to the Judges' Committee, signed by the Competitor.

3. **Self-Controlled Flight.** (A.M.C. Form A., para. 14.)—An official observer, a stop-watch and a recording barograph will be carried. The test will be made at 5,000 ft. The pilot will inform the official observer when the 5-minutes test commences.

4. **Stoppage of One Engine (in Multi-Engined Machines).** (A.M.C. Form A., para. 12.)—Machine will be fitted with a recording barograph, and an official



THE AIR MINISTRY COMPETITIONS: Martlesham Heath and Felixstowe District Map.

observer will be carried. The test will be made at 5,000 ft., half-load will be carried, and one engine previously indicated by the Judges' Committee will be switched off for five minutes.

5. **Reliability and Economy.** (A.M.C. Form A., para. 10) —Machine will be fitted with a recording air-speed indicator and a recording barograph (supplied by the Judges' Committee)— under the supervision of the A.M. Technical Staff. An official observer will be carried. Machine will maintain a height of not more than 4,000 ft., and not less than 3,000 ft., and will be weighed at the start and finish of the flight. The time will be taken from the moment of starting from a position of rest to the moment of touching ground.

6. **Landing (Glide).** (A.M.C. Form A., para. 11.)—Machine will fly for 5 minutes at a height of 500 ft. before switching off or completely throttling down. An official observer and a barograph will be carried.

7. **Wind Tests.** (A.M.C. Form A., para. 15.)—All machines will undergo this test simultaneously when requested to do so by the Judges' Committee. Machines will stand for 10 minutes in each of the following positions relative to the wind: head-on, sideways, and tail-on. Machines will carry half their normal capacity of petrol and oil, but no passengers or crew. Controls may be locked during this test.

8. **Landing and Getting Off.** (A.M.C. Form A., para. 8.)

Landing.—Machine will land over a row of pilot balloons tethered 50 ft. over the floor by means of linen threads (No. 24). (*N.B.*—Many experiments have recently been undertaken in flying into balloons, exactly similar to those used. The balloons burst if struck, but will not affect the machine in any way.)

Getting off.—The limit of the 175-yd. run in the case of small aeroplanes, and of the 275-yd. run in the case of large aeroplanes will be indicated by a strip of white canvas placed 3 ft. above the ground. Machines will fly over it as high as possible, and their height at the moment of passing over it will be judged photographically.

9. **Landing and Getting Off with one Engine cut out (for Multi-engined Machines).** (A.M.C. Form A., para. 9.) —A row of pilot balloons tethered to represent a hedge 6 ft. high will be used in this test.

NOTE.—Through the above tests the Judges' Committee will examine and note the general features of the machine for the award of marks for reliability of Petrol and Oil Systems, ease of taxi-ing, ease of starting engine, etc.

Seaplanes (Amphibians)

Order of Trials and Procedure

The trials of each machine will be carried out in the following order :—

1. **General Examination.** (To include A.M.C. Form B., paras. 3, 4, 5 and suitable sub-sections of para. 20.)—Machines will be weighed empty and examined in detail by the Judges' Committee.

2. **High and Low Speeds.** (A.M.C. Form B., para. 7.)—Machine will be fitted with a recording barograph, a statoscope, a strut thermometer, supplied by the Judges' Committee, under the supervision of the A.M. Technical Staff. An official observer will be carried. Machine will fly over the Speed Course twice each way at a height of 4,000 ft. for each speed, the result being subsequently reduced to sea-level and the necessary corrections made. (The course to be taken is shown on the map of the Aerodrome.)

3. **Self-Controlled Flight.** (A.M.C. Form B., para. 17.) —An official observer, a stop watch and a recording barograph will be carried. The test will be performed at a height of 5,000 ft. The pilot will inform the official observer when the 3-minutes test commences.

4. **Stoppage of One Engine (in Multi-engined Machines).** (A.M.C. Form B., para. 16.).—An official observer, a stop watch and recording barograph will be carried. The test will be performed at a height of 5,000 ft. Half-load will be carried and one engine, previously indicated by the Judges Committee, will be switched off for 5 minutes.

5. **Reliability and Economy.** (A.M.C. Form B., para. 9.) —Machine will be fitted with a recording air-speed indicator, a recording barograph (supplied by the Judges' Committee), under the supervision of the A.M. Technical Staff. An official observer will be carried. Machine will maintain a height of not more than 2,000 ft., and not less than 1,000 ft., and will be weighed at the start and finish of the flight. The start and finish will be at Martlesham Heath Aerodrome.

6. **Self-Controlled Glide.** (A.M.C. Form B., para. 19).— An official observer and a recording barograph will be carried. The test will be performed from the height of 5,000 ft. Normal control may be resumed by the pilot at any height below 4,000 ft.

7. **Alighting and Getting Off.** (A.M.C. Form B., para. 8.)

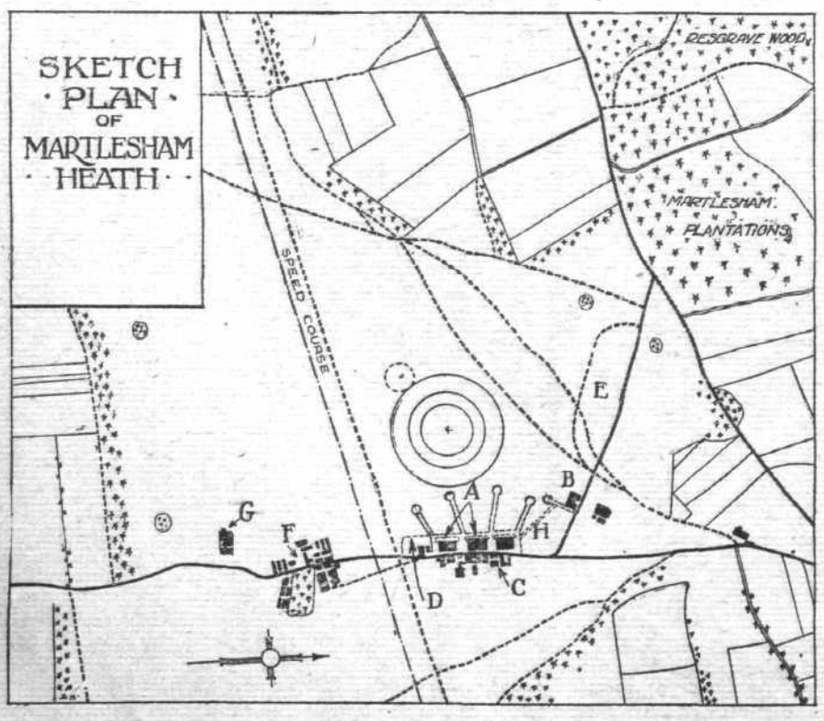
(*a*) *Getting Off (Sea).*—Machines will start from an indicated buoy and pass as high as possible between two mark boats 75 yds. apart and 600 yds. from the starting buoy. The mark boats will have globes on their masts at a height of 25 ft. above sea-level. The height of each machine at the moment of passing between the mark boats will be judged photographically. Machines will fill up immediately on alighting at Martlesham Heath.

(*b*) *Alighting (Land).*—Machines will alight over a row of pilot balloons tethered at height of 25 ft. above the ground by means of linen threads (No. 24). (*N.B.*—Many experiments have been recently undertaken in flying into balloons exactly similar to those used. The balloons burst if struck, but will not affect the machine in any way.)

(*c*) *Getting Off (Land).*—The limit of a 400-yds. run will be indicated by a strip of canvas placed 3 ft. above the ground.

Machines will fly over it as high as possible, and the height at the moment of passing over it will be judged photographically.

NOTE.—Tests (*a*) and (*c*) above will be carried out alternately.)



The Air Ministry Competitions. Plan of Aerodrome, Aeroplane Experimental Establishment, Martlesham Heath. A, Flight Sheds; B, Flight Sheds (Large machines); C, Transport, Workshops, Technical Stores; D, General Offices and Private Enclosure; E, Public Enclosure; F, Barracks, Hospital and Officers' Quarters; G, Competitors' Hostel; H, Car Enclosure

8. **Taxi-ing.** (A.M.C. Form B., para. 13.)—Test will be performed in a smooth sea.

9. **Figure of Eight Taxi-ing.** (A.M.C. Form B., para. 14.)—Machines will be cinematographed during this test to show stability afloat and the amount of spray.

10. **Anchoring and Mooring.** (A.M.C. Form B., para. 15.)

11. **Mooring out (Fair Weather).** (A.M.C. Form B., para. 10 (*a*).)—Machines will fly from their moorings and land at Martlesham Heath on the conclusion of the 24-hours test.

12. **Mooring Out (Moderate Weather).** (A.M.C. Form B., para. 10 (*b*).)

13. **Getting Off and Alighting (Rough Water).** (A.M.C. Form B., para. 11.)

14. **Towing.** (A.M.C. Form B., para. 12.)—Machines will be towed by a motor-boat supplied by the Judges' Committee. Competitors may provide their own towing tackle.

NOTE.—Throughout the above tests the Judges' Committee will examine and note the general features of each machine for the award of marks for reliability of petrol and oil system, ease of taxi-ing, ease of starting engine, behaviour afloat, etc.

ROYAL AERONAUTICAL SOCIETY NOTICES

Lectures.—The following programme of lectures to the students of Sheffield University has been arranged at the request of the Vice-Chancellor:—October 21, "Notes on Inspection of Aircraft Steels," by Brig.-Gen. Bagnall Wild, C.M.G.; October 28, "Steels for Aircraft Tubes," by Dr. Aitchison; November 4, "Case Hardened Steels and some Defects met with during Inspection," by Capt. A. Thain; November 11, "Cold Worked Aircraft Structural Steels," by Dr. Aitchison; November 18, "Materials for Aircraft from the point of view of the Designer," by Mr. A. J. Rowledge; November 25, "The Economical Use of Steel in Aircraft," by Mr. A. A. Remington.

The Council desire to tender their grateful thanks to the following gentlemen for giving their services to deliver popular lectures during the Aero Show at Olympia:—Sqdn. Ldr. J. E. M. Pritchard, Capt. P. D. Acland, Mr. Griffith Brewer, Major H. E. Wimperis, Capt. D. Nicolson, and Mr. F. M. Green.

Office.—Members are requested to note that the offices of the Society at 7, Albemarle Street, W. 1, will be closed from July 30 to August 17.

Autumn Session.—In addition to the list of lectures announced last week arrangements are being made at the request of the Aeronautical Research Committee for the reading and discussing of a paper on "A Comparison of the Flying Qualities of Single and Twin-Engined Aeroplanes," which has recently been presented by Sqdn. Ldr. R. M. Hill, R.A.F., to that body. Papers on "Airship Mooring and Handling," "Airship Piloting," and "Airship Fabric" will also be read.

Air Ministry Library.—Permission has been obtained from the Air Council for technical members of the Society to use the Air Ministry Library for reference purposes on production of letters of introduction signed by the Secretary of the Society. Any members desiring to avail themselves of this privilege should therefore apply to the Secretary for a formal letter of introduction.

Annual Dinner.—It is proposed to hold the first Annual Dinner of the Members of the Society during the month of October next. Members who anticipate being able to be present will assist in making the necessary arrangements if they will communicate the fact to the Secretary at an early date.

W. LOCKWOOD MARSH,
Secretary

7, Albemarle Street, W. 1.

Death

MR. JAMES WEIR, who, with his brother, Mr. George Weir, founded the firm of Messrs. G. and J. Weir, died on July 10 at Over Courance, Dumfriesshire. Mr. George Weir retired from the business many years ago, but Mr. James continued to take an active part until about 10 years ago, when he purchased the estate of Over Courance, which he farmed with success. Since his retirement, the business has been managed by the directors, including his eldest son, Lord Weir, the late Air Minister, his second son, Brig.-Gnl. J. S. Weir, C.M.G., who did valuable service in the Air Force during the war, and his son-in-law, Mr. J. R. Richmond, C.B.E.

Married.

Flying Officer GEORGE GAYWOOD BANTING was married on July 16 at St. Mary Abbott's, Kensington to **Helen Margaret Ramsay**.

At St. Margaret's, Westminster, Air-Marshal Sir HUGH TRENCHARD, Bt., K.C.B., D.S.O., Chief of the Air Staff and Colonel of the Royal Scots Fusiliers, was married on Saturday, July 17, to KATHARINE, widow of Capt. the Hon. JAMES BOYLE, Royal Scots Fusiliers, and second daughter of the late Mr. Edward Salvin Bowlby, of Gilston Park, Herts, and of Knoydart, Inverness-shire, and of Mrs. Salvin Bowlby, of 56, Lowndes-Square. The Hon. Maurice Baring was best man, and the Rev. Harry Dan Leigh Viener, Chaplain of the Air Force, officiated, assisted by the bride's cousin, the Rev. Henry Thomas Bowlby, Headmaster of Lancing College. Among those who attended the ceremony were Mr. and Mrs. Churchill, the Marquess of Londonderry with his two younger daughters, Lady Desborough, Viscount Cowdray, General Duval, Chief of the French Air Service, the Earl and Countess of Kenmare, the Earl and Countess of Cassillis, the Earl and Countess of Dunmore, the Earl of Cranbrook, Lord Stanmore, Lord Hugh Cecil, Lieut.-Gen. Sir John and Lady Birch, Mrs. Salvin Bowlby, the bride's mother, Sir Anthony and Lady Bowlby, Colonel G. H. Agnew, D.S.O., Major-Gen. Sir Frederick and Lady Sykes, Mr. Edward Trenchard, the Hon. Mrs. Geoffrey Bowlby, Wing Commander the Hon. John and Mrs. Boyle, the Hon. Alan and Mrs. Boyle, Col. and Mrs. Douglas Brownrigg, Lieut.-Gen. Sir Philip and Lady Chetwode, Lieut.-Gen. Sir John and Lady Du Cane, Capt. and Mrs. Eastwood, the latter a sister of the bridegroom, Sir Walter and Lady Egerton, Air Vice-Marshal and Miss Ellington, Colonel F. H. Errington, Air Commodore and Mrs. Fell, Lieut.-Gen. Sir D. and Lady Henderson, Air Vice-Marshal and Mrs. Higgins, Gen. F. F. and Mrs. Hill, Col. the Hon. A. and Mrs. Hore Ruthven, Rear Admiral Sir Cecil and Lady Lambert, Maj.-Gen. Sir F. Maurice, Brevet Col. O. H. and Mrs. Delane Osborne, Air Commodore Pitcher, Sir Walter and Lady Raleigh, Lieut.-Col. and Mrs. Moore-Brabazon, Wing-Com. Sir H. A. van Ryneveld, Air Vice-Marshal **Sir W. G. and Lady Salmond, Air Vice-Marshal** Sir J. Salmond, Brig.-Gen. and Mrs. Scudamore, Maj.-Gen. Seely, and a large number of flying officers, officers and officials of the various departments of the Air Ministry, and officers of the 1st Battalion of the Royal Scots Fusiliers and the Royal Scots Fusiliers' depot at Ayr. Among those who signed the register were Mr. Churchill and the Marquess of Londonderry. A guard of honour of officers and men of the R.A.F. lined the path outside the church, and six pipers of the Royal Scots Fusiliers piped the bride and groom from the church door to their carriage.

To be Married.

A marriage has been arranged, and will take place on August 17, at Great Horkesley, between Capt. FRANK CROSSLEY BROOME, D.F.C., younger son of Mr. and Mrs. Frank Broome, of Winterbourne, Weybridge, and NANCY ISMAY, elder daughter of the late Lieut-Col. Lermitte and Mrs. Lermitte, Woodhouse, Great Horkesley, Colchester.

Items

THE will of Prof. ALFRED KIRBY HUNTINGDON, of Buckingham Street, Strand, has been proved at £15,772.

The will of Capt. Flight-Com. RICHARD LITTON LYSTER SMYTHE, R.A.F., of Collinstown, Westmeath, has been proved at £596.

HONOURS

IT was stated in a Supplement to the *London Gazette* that the King has given orders for the following appointment to the Order of the Bath, in recognition of distinguished services in the recent operations in Somaliland :—

C.B. (Military Division)

Group Capt. R. GORDON, C.M.G., D.S.O., R.A.F.

The King has given orders for the following promotion in, and appointments to, the Order of the British Empire, in recognition of distinguished services :—

C.B.E. (Military Division)

Squadn. Leader J. O. ARCHER, O.B.E. (S. Russia) ; Squadn. Leader H. L. JACKSON (Paymr. Lt.-Comdr., R.N.) (omitted in error from *Gazette* of Dec. 22, 1919, and to bear that date accordingly) ; Squadn. Leader N. M. MARTIN (Somaliland) ; Squadn. Leader (A. Wing Comdr.) A. C. MAUND, D.S.O. (S. Russia) ; Squadn. Leader (A. Wing Comdr.) F. F. MINCHIN, D.S.O., M.C. (India).

O.B.E. (Military Division)

Squadn. Leader W. R. BRUCE (India) ; Flight Lt. (A. Squadn Leader) A. W. CLEMSON, D.S.C. (S. Russia) ; Flight Lt. (A. Squadn. Leader) R. COLLISHAW, D.S.O., D.S.C., D.F.C. (S. Russia) ; Flight Lt. (A. Squadn. Leader) L. H. SLATTER, D.S.C., D.F.C. (S. Russia) ; Flight Lt. (A. Squadn. Leader) H. A. TWEEDIE, A.F.C. (India).

M.B.E. (Military Division)

Flying Offr. J. COTTLE, D.F.C. (48th Squadn., Afghanistan) ; Observer Offr. A. J. Cox (31st Squadn., Afghanistan) ; Flying Offr. F. JEZZARD (Somaliland) ; Flying Offr. W. J. RIVETT CARNAC (S. Russia) ; Pilot Offr. (A. Flying Offr.) H. H. WELLER (S. Russia).

The King has approved of the following rewards for gallantry and distinguished services :—

Distinguished Service Order

Flight Lt. J. W. B. GRIGSON, D.F.C. (S. Russia) ; Flying Offr. H. P. LALE, D.F.C. (Waziristan).

Second Bar to Distinguished Flying Cross

Flight Lt. R. HALLEY, D.F.C., A.F.C. (Afghanistan).

Bar to Distinguished Flying Cross

Flying Offr. H. C. E. BOCKETT-PUGH, D.F.C. (Somaliland) ; Flying Offr. J. D. BREAKEY, D.F.C. (S. Russia) ; Flight Lt. D. H. M. CARBERY, M.C., D.F.C. (Afghanistan) ; Flying Offr. H. P. LALE, D.F.C. (Waziristan) ; Flying Offr. G. E. RANDALL, D.F.C. (Waziristan).

Distinguished Flying Cross

Flight Lt. W. F. ANDERSON, D.S.O. (S. Russia) ; Flying Offr. M. H. ATEN (S. Russia) ; Flight Lt. C. BOUMPHREY (Baltic) ; Flying Offr. E. BREWERTON (Baltic) ; Flying Offr. E. A. C. BRITTON (Waziristan) ; Flying Offr. K. H. BROWN (114th Sqn., Afghanistan) (R.F.A.) ; Flying Offr. L. H. BROWNING, M.C. (62rd Sqn., Kurdistan) ; Observr. Offr. E. G. T. CHUBB (S. Russia) ; Flight Lt. R. H. DALY, D.S.C. (S. Russia) ; Obsrvr. Offr. A. E. EVANS (63rd Sqn., Kurdistan (E. Surr. R.)) ; Flying Offr. J. MacG. FAIRWEATHER (Baltic) ; Flight Lt. A. W. FLETCHER, A.F.C. (Baltic) ; Flight Lt. C. F. GORDON, O.B.E., M.C. (S. Russia) ; Flying Ofir. J. A. GRAY (Somaliland) ; Obsrvr. Offr. A. HESKETH (S. Russia) ; Flying Offr. E. R. C. HOBSON (Somaliland) ; Flying Offr. S. D. Mac.Donald, (63rd Sqn., Kurdistan) ; Obsrvr. Offr. J. MITCHELL, D.S.O. (S. Russia) ; Flying Offr. G. S. ODDIE (31st Sqn., Afghanistan) ; Flying Offr. R. D. C. PALMER (6th Sqn., Albu Kemal) ; Lt. P. PHILLIPS (late 63rd Sqn., Kurdistan) ; Lt. A. C. UPHAM (late 114th Sqn., Afghanistan) ; Flying Offr. C. McC. VINCENT (31st Sqn., Afghanistan).

Bar to the Air Force Cross

Flying Offr. P. W. S. BULMAN, M.C., A.F.C. (Experimental Pilot) ; Flight Lt. W. R. READ, M.C., D.F.C., A.F.C. (216th Sqn., Palestine (1st D. Gds.).

Air Force Cross

Hon. Lt. (A. Capt.) E. C. BAINES (S. Russia) ; Flying Offr. C. O. BIRD (late 70th Sqn., Egypt) ; Flight Lt. J. S. BROWNE (216th Sqn., Palestine) ; Lt. A. H. G. DUNKERLEY (70th Sqn., Egypt) ; Lt. W. C. GEE (I.A.R.O. (late 214th Sqn.)) ; Lt. E. J. HEAD (S. Russia) ; Flight Lt. T. HENDERSON, M.C. (Basrah) ; Flying Offr. E. G. HILTON (70th Sqn., Egypt) ; Flying Offr. J. B. JAQUES, M.W. (D.L.I.) (late 216th Sqn., Palestine) ; Sec. Lt. L. H. L'HOLLIER (Egypt) ; Wrnt. Offr. (1) A. W. MURPHY, D.F.C. (Aust. F. Corps, Australia) ; Flying Offr. A. P. RITCHIE (S. Russia) ; Flying Offr. H. G. SAWYER (216th Sqn., Palestine) ; Lt. J. D. VANCE (late R.A.F. and Canadian M.S.C.) ; Sqn. Ldr. W. L. WELSH, D.S.C. (216th Sqn., Palestine) ; Flying Offr. G. W. WILSON. (216th Sqn., Palestine) ; Capt. H. N. WRIGLEY, D.F.C. (Aust. F. Corp., Australia) ; Lt. H. A. YATES (late R.A.F. and Canadian Engrs.).

Mentioned in Despatches

(Dated March 31, 1920, except where otherwise indicated.)

Flight Lt. W. R. D. ACLAND, D.F.C., A.F.C. (Baltic) ; Flight Lt. W. F. ANDERSON, D.S.O., D.F.C. (S. Russia) ; Lt. F. G. APLIN, M.C. (Baltic) ; Sqndn. Ldr. J. O. ARCHER, C.B.E. (S. Russia) ; Lt. H. C. ARNOLD (Baltic) ; Flying Offr. E. H. ATTWOOD (Somaliland) ; Flight Lt. A. W. BEAUCHAMP, PROCTOR, V.C., D.S.O., M.C., D.F.C., 84th Sqndn., R.A.F., France (omitted from *Gazette* dated Jan. 1, 1919) ; Flying Offr. H. W. BAGGS (63rd Sqdn., Kurdistan) ; Wing Comdr. F. W. BOWHILL, C.M.G., D.S.O. (Somaliland) ; Flying Offr. R. C. B. BRADING, D.F.C. (Baltic) ; Lt. A. le G. CAMPBELL, 2nd H.L.I. (late 63rd Sqdn., Kurdistan) ; Flight Lt. (A. Sqdn. Ldr.) R. COLLISHAW, D.S.O., O.B.E., D.S.C., D.F.C. (S. Russia) ; Flying Offr. S. D. CULLEY, D.S.O. (Baltic) ; Lt. G. P. W. EARLE (Baltic) ; Flying Offr. C. H. FLINN (Somaliland) ; Flying Offr. S. G. FROGLEY, D.S.O., D.F.C. (S. Russia) ; Flying Offr. O. R. GAYFORD, D.F.C. (Somaliland) ; Flying Offr. S. R. GELLETT (Baltic) ; Group Capt. R. GORDON, C.B., C.M.G., D.S.O. (Somaliland) ; Obs. Offr. E. B. GREEN, M.C. (Somaliland) ; Flight Lt. J. W. B. GRIGSON, D.S.O., D.F.C. (S. Russia).

Flying Offr. A. JERRARD, V.C., 14th Wing R.A.F. (Italy) (omitted from *Gazette* dated Jan. 1, 1919) ; Flying Offr. S. M. KINKEAD, D.S.O., D.S.C., D.F.C., (S. Russia) ; Flying Offr. E. W. LOGSDAIL (Baltic) ; Sqdn. Ldr. N. M. MARTIN, C.B.E. (Somaliland) ; Sqdn. Ldr. (A. Wing Comdr.) A. C. MAUND, C.B.E., D.S.O. (S. Russia) ; Flying Offr. R. P. P. POPE, D.F.C. (63rd Sqdn., Afghanistan) (E. Suit. R.) ; Flying Offr. S. H. POTTER (Somaliland) ; L. W. RANGER (Baltic) ; Lt. W. L. ROBERTS, M.C. (Somaliland) (Middx. R.) ; Flight Lt. J. G. SKEET, M.R.C.S., L.R.C.P., (Somaliland) ; Flying Offr. L. A. C. STAFFORD (Somaliland) ; Wing. Comdr. W. TYRRELL, D.S.O., M.C., M.B. (Somaliland) ; Obs. Offr. F. A. WHIPPEY, D. F.C. (Baltic) ; Flying Offr. T. M. WILLIAMS, M.C., D.F.C. (Baltic) ; Lt. F. C. VINCENT, D.F.C. (Baltic) ; *Flight Lt. F. M. F. WEST, V.C., M.C., No. 8 Sqnd., R.A.F., France.* (Omitted from *Gazette* dated Jan. 1, 1919) ; 334063 Cpl. J. ANDERSON (Somaliland) ; 291801 A.C. 2 A. BROWN (Somaliland) ; 336792 A.C. 1 E. W. BRUCE (Somaliland) ; 95921 A.C. 1 L. C. BUNKALL (Somaliland) ; 291801 S. M. 1 C. E. H. BUNTING (Somaliland) ; 275943 A. C. 1 J. A. BURROW (Somaliland) ; 302676 Cpl. J. COFFEY (Somaliland) ; 302628 W.O. 1 T. DESMOND (Somaliland) 334212 Sgt. E. EVANS (Somaliland) ; 200505 Flight Sgt. H. J. FERGUSSON (Somaliland) ; 302630 W. O. 1 W. GAMBLEN (Somaliland) ; 127036 A. C. 1 A. E. HESTER (Somaliland) ; 340350 Cpl. A. HUTCHINSON (Somaliland) ; 28834 Sgt. J. KINGGETT (63rd Sqdn., Kurdistan) ; 340273 L. A. C. MCKEE (Somaliland) ; 402039 Cpl. W. H. SYDENHAM (Somaliland) ; 140102 A.C. 1 T. G. TURRILL (Somaliland).

Promotion to Flight Lieutenant for Distinguished Service in the Field

Flying Offr. J. W. HOSKING, M.B.E. (Somaliland).

Distinguished Flying Medal

26645 Cpl. J. T. BUNTING (63rd Sqdn., Kurdistan) ; 19154 Sgt. P. I. DAVID (63rd Sqdn., Kurdistan) ; 206740 Cpl. H. W. PICKRELL (63rd Sqdn., Kurdistan) ; 31105 Sgt. S. C. SPINK (63rd Sqdn., Kurdistan).

Air Force Medal

103406 Sgt. T. ASPLEY (216th Sqdn., Palestine) ; 59728 A. Sgt. C. G. BARNES (216th Sqdn., Palestine) ; 314123 Sgt. A. D. BOOTH (314th Sqdn. Egypt) ; 204117 Actg. W.O. W. S. BURVILLE, D.S.M. (214th Sqdn., Egypt) ; 204479 Flight Sgt. H. CADMAN (214th Sqdn., Egypt) ; 47966 A.C. T. Y. CORDINER (late 58th Sqdn., Egypt) ; 723 S. M. 1 H. A. GAMON (216th Sqdnt.) Palestine) ; 314863 Flight Sgt. W. J. GLYDE (216th Sqdn., Palestine) ; 277072 A.M. 2 C. F. HAND (Egypt) ; 249303 L.A.C. F. C. HOLMES (216th Sqdn., Palestine) ; 204161 Flight Sgt. P. McDIARMID (216th Sqdn., Palestine) ; 56796 A.C. 1 A. D. C. MARTIN (late 58th Sqdn., Egypt) ; 202859 Sgt. J. PARKES (Airship R 29, (East Fortune)) ; 104480 L.A.C.G. A. E. PRITCHARD (70th Sqdn., Egypt) ; 98510 L.A.W. E. STEDMAN (Egypt) ; 76140 Sgt. P. WADDINGHAM (216th Sqdn., Palestine) ; 219086 Cpl. G. E. WEST (216th Sqdn., Palestine) ; 140482 Cpl. T. VOSE (216th Sqdn., Palestine) ; 3592 Flight Sgt. J. YEADON (70th Sqdn., Egypt).

Meritorious Service Medal

203984 Cpl. F. W. AGGETT (S. Russia) ; 82022 A. Sgt. T. G. A. AGGUS (S. Russia) ; 109438 A.C. 2 J. AITKENHEAD (S. Russia) ; 207121 L.A.C. W. C. BLACKWOOD (S. Russia) ; 314123 Sgt. A. D. BOOTH, A.F.M. (Somaliland) ; 157159 A. C. 1 E. W. BRAUND (S. Russia) ; 54480 Cpl. F. F. F. BULMAN (Somaliland) ; 338009 Flight Sgt. W. H. CHETPINS (Somaliland) ; 277405 A.C. 2 L. C. CLAY (S. Russia) ; 230556 Cpl. C. R. COE (S. Russia) ; 217781 A.C. 1 L. V. COOPER (S. Russia) ; 229436 Sgt. H. H. COWARD (Baltic) ; 204005 Flight Sgt. A. J. CROOK (Somaliland) ; 230872 A.M. 3 L. S. DAVIES (S. Russia) ; 103095 L.A.C. J. ELLIS (Baltic) ; 200599 S.M. 1 S. P. FINCH, D.S.M. (S. Russia) ; 51210 Cpl. H. G. GOACHER (S. Russia) ; 107444 A.C. 1 J. GRANT (S. Russia) ; 65968 L.A.C. J. R. GRAY (Somaliland) ; 304104 A. C. 1 R. KING (Somaliland) ; 141436 A. C. 2 J. KNOWLES (S. Russia) ; 10697 L.A.C. E.E. LOCKYER (Somaliland) ; 62129 T.Sgt. W. E. MADDOCKS (S. Russia) ; 244083 L.A.C. (A.Cpl.) T. A. PATTINSON (S. Russia) ; 200765 Flight Sgt. L. PENICUD (Mesopotamia) ; 37966 Cpl. A. H. PEACOCK (S. Russia) ; 243966 L.A.C. (A.Cpl.) W. J. PLANK (S. Russia) ; 69340 Cpl. S. W. H. POUND (S. Russia) ; 141225 A.C. 1 A. ROWBOTHAM (S. Russia) ; 293496 A.C. 2 H. SADLER (S. Russia) ; 410372 Flight Sgt. W. SHARP (Somaliland) ; 313247 Flight Sgt. A. A. SHEPHARD (S. Russia) ; 226425 L.A.C. M. H. W. SHORT (S. Russia) ; 42243 Sgt. P. A. SIMPSON (Baltic) ; 224616 Flight Sgt. E. G. SMITH (Baltic) ; 67503 Cpl. G. E. SOUTHCOTT (20th Sqdn., N.W.F., India) ; Sgt. F. STANLEY (Baltic, H.M.S. " Vindictive ") ; 210778 Cpl. F. M. STUART (S. Russia) ; 102474 Cpl. J. TELFORD (Somaliland) ; 403683 L.A.C. J. TURTON (S. Russia) ; 130334 L.A.C. J. W. WALKER (S. Russia) ; 58767 L.A.C. (A. Cpl.) F. O. WEBSTER (S. Russia) ; 35208 Cpl. E. C. WHITE (Somaliland) ; 244093 A.C. 1 J. T. WREN (S. Russia).

Corrections

The following are the correct descriptions of officers and other ranks whose names have appeared in the *Gazette* indicated :—

Maj. George Martin Treharne Rees, O.B.E. (*Gazette*, Jan. 1, 1919).

Sec. Lt. (A. Capt.) Robert McLorinana Freemantle, M.B.E. (*Gazette*, Jan. 1, 1919). Capt. Leonard Edward Lander, M.B.E. (*Gazette*, Jan. 1, 1919).

Capt. (A. Maj.) James Bogue Elliott, O.B.E. (Rif. Bde.) (*Gazette*, Jan. 1, 1919). Maj. Percy Bernard John Murrell, O.B.E. (R.N.V.R.) (*Gazette*, Jan. 1, 1919). Capt. Frank Jefcatoe, M.B.E. (appointment to the Order of the British Empire, 5th Grade, is now altered to date Jan. 1, 1919, instead of June 3, 1919, as published).

Capt. Albert Urbain Hansford, M.B.E. Asst.-Adminstrator Miss Marion Annie Thomson, M.B.E. Lt.-Col. Jasper Wallace Cruikshank, O.B.E. (Durh. L.I.) (*Gazette*, Jan. 1, 1919).

Capt. (A. Maj.) Charles Fradsall Yeomans, O.B.E. (*Gazette*, June 3, 1919). Administrator Mrs. Constance Theodora Bayley, M.B.E. (*Gazette*, June 3, 1919).

Flight Lt. Percy William Smith, O.B.E. (*Gazette*, Oct. 10, 1919).

Capt. (actg. Maj.) Alexander Morice Wilson (4th Gord. Highrs.). Awarded the M.B.E. in *Gazette* of June 3, 1919, in error, is now promoted to the 4th Grade, Mil. Div. (O.B.E.) from that date inclusive.

Foreign Decorations

The King has granted unrestricted permission for the wearing of the undermentioned decorations, conferred on officers of the Royal Air Force for valuable services in connection with the War :—

CONFERRED ON THE KING OF ITALY.

Order of the Crown (Officer).—Wing-Comdr. Alfred Hearst Wynn Elias WYNN, O.B.E.

Order of the Crown (Cavalier).—Flight Lt. Arthur ROWAN, Flight Lt. Ferdinand Maurice Felix WEST, V.C. M.C.

CONFERRED BY THE KING OF THE HELLENES.

Greek Military Medal, 3rd Class.—Capt. John BANKS WALMSLEY, D.F.C. (Indian Army) ; Flying Offr. Charles Basil Slater SPACKMAN, D.F.C. ; Sec. Lt. John Hunt FURNISS, M.B.E. ; Maj. Alexander Morice WILSON, O.B.E. (Capt. 4th Gord. Highrs.).

The Military Cross

The King has approved of the award of the Military Cross to Observer Offr. Josiah Edward TRUSS, 114th Squadron, R.A.F., for bravery against the enemy in the field on July 27, 1919, between Loralai and Quetta.

Mentioned in Despatches

In a supplement to the *London Gazette* dated July 16 it was stated that the names of the following have been brought to the notice of the Secretary of State for War by Maj.-Genl. H. C. Holman, K.C.B., C.M.G., D.S.O., for valuable and distinguished services rendered with the British Military Mission in South Russia. Dated March 15, 1920 :—

F.O. H. ALLSEBROOK, R.A.F. ; Sqdn. Ldr. J. O. ARCHER, O.B.E., R.A.F. ; F.O. (A./Capt.) W. BOURNE, R.A.F. ; F. Lieut. H. EDWARDS, R.A.F. ; F.O. E. FULFORD, R.A.F. ; F.O. D. B. C. FULTON, R.A.F. ; F.O. V. HOLDER, R.A.F. ; Obsr.O. J. MITCHELL, R.A.F. ; F. Lieut. W. S. C. SMITH, R.A.F. ; F.O. E. P. TERRY, R.A.F.

FLIGHT
AIRCRAFT ENGINEER AND AIRSHIPS

THE ROYAL AIR FORCE

London Gazette, July 13

ROYAL AIR FORCE MEDICAL SERVICE

Permanent Commissions

The following are granted permanent commns. in the Royal Air Force Medical Service (subject to physical fitness and acceptance of final conditions of service, when promulgated), with effect from the dates indicated, in the order of seniority shown :—

Wing Cdrs.—H. V. Wells, C.B.E., C. E. C. Stanford, D.S.O., M.B., B.Sc., A. W. Iredell, H. Cooper, D.S.O., B.A., A. V. J. Richardson, O.B.E., M.B., B.A., J. McIntyre, M.C., M.A., M.B., M. W. Flack, C.B.E. ; Aug. 1, 1919.

Sqdn. Ldrs.—H. M. S. Turner, M.B.E., E. C. Clements, O.B.E., W. W. Shorten, F.R.C.S., W. A. S. Duck, O.B.E., B. A. Playne, D.S.O., M.B., B.A., R. H. Knowles, M.D., H. A. Treadgold, M.D., B.S., B.A., J. MacGregor, M.C., M.D., H. A. Hewat, M.B., H. B. Porteous, M.B., T. S. Rippon, O.B.E., F. N. B. Smartt, M.B., B.A., H. E. Whittingham, M.B., D. Ranken, M.B., B.S., F.R.C.S. ; Aug. 1, 1919.

Flight Lieuts.—A. S. Glynn, M.B., A. E. Panter, B.A., H. W. Scott, B.A., P. M. Keane ; Aug. 1, 1919. T. J. Kelly, M.C., M.B., B.A. ; March 25. R. S. Overton, D'Arcy Power, M.C., J. Rothwell, M.B., K. Biggs, M.C., A. J. O. Wigmore, M.B., J. H. Porter, M.C., M.B., A. F. Rook, T. C. St. C. Morton, M.B., G. S. Marshall, O.B.E., E. W. Craig, M.C., M.B., R. A. G. Elliott, M.B., B.A., T. J. Thomas, M.B., B.S., P. H. Young, M.B., R. S. Topham, M.B., T. R. S. Thompson, M.B., P. C. Livingston, P. J. Flood, J. T. T. Forbes, J. Kyle, C. T. O'Neill, M.B. ; July 13.

The following promotions are made :—

Sqdn. Ldrs. to be Wing Comdrs.—H. M. S. Turner, M.B.E. ; Dec. 1, 1919. E. C. Clements, O.B.E. ; June 1.

Flight Lieuts. to be Sqdn. Ldrs.—A. S. Glynn, M.B. ; Aug. 5, 1919. A. E. Panter, B.A. ; Oct. 3, 1919. H. W. Scott, B.A. ; March 8. P. M. Keane ; June 1.

The following are granted short service commns. in the R.A.F. Medical Service (subject to physical fitness and acceptance of final conditions of service, when promulgated), with effect from the dates indicated, in the order of seniority shown :—

Sqdn. Ldrs. (whilst so employed).—R. L. Roe, O.B.E., M.B., H. Harvey, F. C. Jobson ; Aug. 1, 1919.

Flight Lieuts.—E. P. Punch, E. N. H. Gray, R. E. Bell, M.B., C. H. B. Thompson, E. A. Lumley, M.C. M.B., D. G. Boddie, M.B., R. J. Aherne, W. F. Wilson, M.C., M.B., F. J. P. Saunders, W. A. Malone, F. J. Murphy, M.B., H. McW. Daniel, M.B., A. E. Barr-Sim, M.B., P. A. Hall, M.B., B.A., H. B. Troup, R. Mugliston, J. C. Smyth, J. P. Hosford, J. J. O'Mullane, M.B., J. P. Wells, B.A., T. Montgomery, M.B., B.A., A. Briscoe, M.B., E. G. O'Gorman, M.B., T. J. X. Canton, M.B., W. F. Shiel, M.B., A. Watson, M.B., C. H. Young, M.B. ; July 13.

Flight Lieut. F. J. P. Saunders is secd. for duty with the Director of Research ; April 1.

Short Service Commissions

The following officers are granted short service commns. in the ranks stated, with effect from the dates indicated. The officers will retain their seniority in the last substantive rank held by them prior to the grant of the short service commn. :—

Flight Lieut.—E. P. Hardman, D.F.C. (A.) ; July 7.

Flying Officers.—J. B. Allen (A.) ; July 5. V. P. Feather (A.) ; July 10. J. Talbot (A.) ; July 3.

Observer Officer.—W. W. Bradford ; June 28 (substituted for notification in *Gazette* of July 2.) The name of Observer Officer J. R. Stafford-Langan, D.F.C., is as now described, and not as shown in *Gazette* of Sept. 12, 1919. Flying Officer S. G. Frogley, D.S.O., D.F.C. (A.), resigns his short service commn. and is granted rank of Flight Lieut. ; June 24.

Flying Officer R. B. Sutherland, D.F.C. (Canadian Engrs.), is granted a short service commn. ; July 2.

MODELS

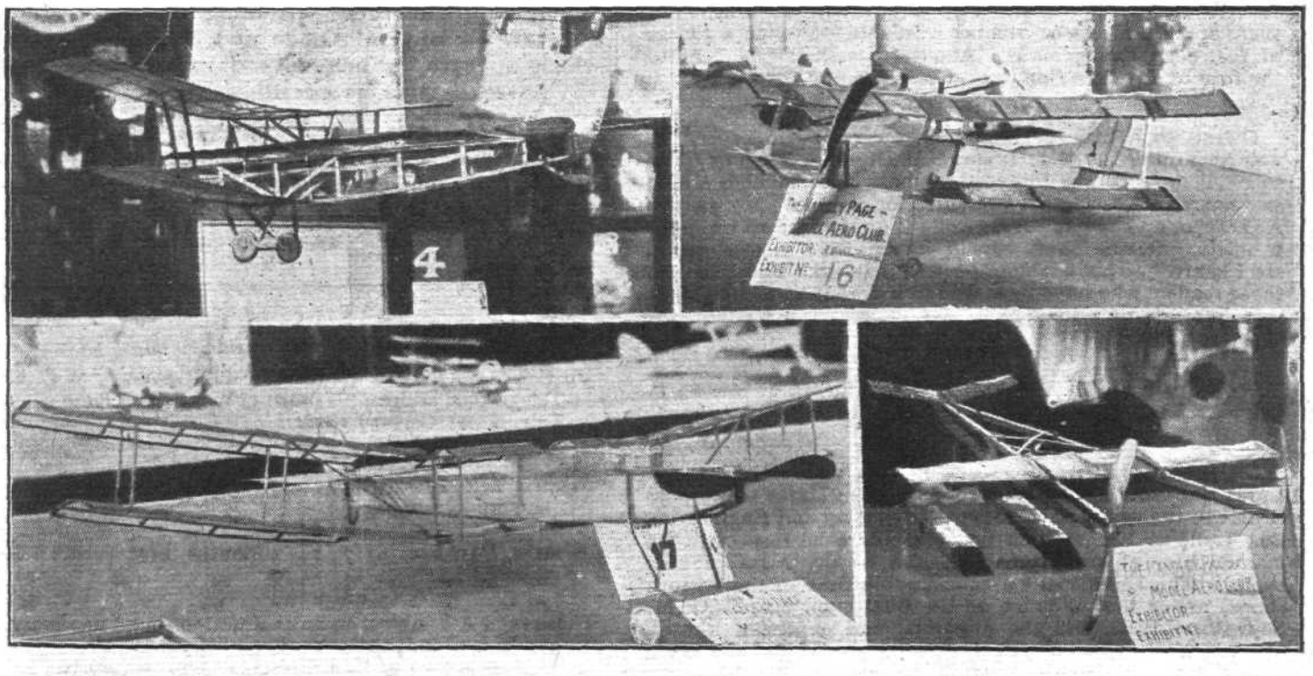
BY F. J. CAMM

The Olympia Show

WE were interested in the ornithopter shown in the inventions section by Mr. Dixon. This appeared to work on a principle hitherto untried by experimenters in ornithoptery. Although no details regarding its performance could be garnered (Mr. Dixon is of the type who prefers to experiment alone !) the machine was certainly well made, and it would be interesting to hear details of its further trials. As previously stated, the exhibits in the model section were few, but I had the pleasure of a chat with Mr. Louch and many others of the older aero-modellists, and next August will, I think, see an energetic revival. Louch, by the way, is busy with a new type of compressed air engine, of which further details will be given as soon as they are available. A compressed air model shown by Mr. Shrodniski and driven by the Pavely plant, has accomplished a duration, it was stated, of 53 secs., a good performance for so small a machine ; of the other models, most of which were by the Handley Page Club and of the orthodox type, the photos. here given will be sufficiently representative. Many of the builders promised drawings of the machines, and we hope to be able to publish these when received.

The K.M.A.A. Reviving

MY note in a recent issue of FLIGHT relating to the K.M.A.A. has elicited the following letter from Mr. A. F. Houlberg, a former holder of the duration record :—



SOME MODELS AT OLYMPIA: Top, left, an enclosed *fuselage* model on Messrs. A. E. Jones' stand; right, a model by Mr. Hudson, sec. of the H.P. Club. Bottom, left, a big biplane, right, a monoplane hydro model built by members of the Handley Page Model Club

"You will no doubt be surprised to hear from me after all these years, but I cannot let your article in a recent issue of FLIGHT pass without comment.

"The K. & M.A.A. is far from being defunct, and a meeting of the Advisory Committee was held at Caxton Hall on the 12th inst., where it was decided to renew the activities of the Association.

"I can set your mind at rest regarding the cups and trophies. These are all accounted for and in good keeping, so that there is every prospect of the Association being as active as it was before.

"A. F. HOULBERG."

This is good news indeed, but it is reasonable to ask why the press was not informed of the meeting, when they could do so much to help along a revival. The season is half gone, and no time should be lost in getting things in order. I hope to have met Mr. Houlberg and Mr. Lyche, who succeeded Mr. Akehurst as Secretary, ere these lines appear. It is distinctly encouraging to hear that at last model aviation is recovering from the crimp put into it by the War.

A Model Club for St. Margaret's-on-Thames

MR. A. SRODINSKI, of Norcellor, 103, Haliburton Road, St. Margaret's-on-Thames, would like to see a model club of some sort commenced in and around the district in which he lives (Richmond and Isleworth), and would be glad to get into touch with any persons interested in such a club.

Replies to Correspondents

A.E.P. (Portsmouth).—A four-bladed screw is certainly not twice as efficient, but it has certain advantages over two-bladed screws, which I shall deal with shortly.

R.F. (Bradford).—Please let us know if you receive a reply from the gentleman in question.

E. R. C. W. (Bombay).—We duly forwarded the phosphor tin and stearin.

SIDEWINDS

THE compendium of aircraft equipment, which has been produced by Messrs. Brown Bros., is a unique book and the trade have shown their gratitude by very nearly exhausting the first edition. It is an exclusive publication, prepared solely for the aircraft industry, and contains in systematic order, all essential data, specifications, etc., of A.G.S. parts, instruments and fittings. Going through the list it would seem impossible that any material, fitting or accessory, has been omitted, and it is only in very few cases that the particulars are not accompanied by an illustration. Apart from this side of the book, there are a large number of illustrations of most of the types of British aircraft and engines, together with specifications, etc. Copies of the catalogue have been sent to all aircraft constructors throughout the world, but there are still a limited number available for which a charge of 10*s.* 6*d.* is being made. Applications should be sent to the firm at Brown's Buildings, Great Eastern Street, E.C. 2.

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OWING to a little perversity on the part of a typist the note regarding the B.T.H. stand at Olympia was not quite so explicit as it was intended to be. The magneto which was referred to as specially designed for 9 cyl. engines was the A.Q. type, and not the A12, while the reference to the non-magnetic steering shaft should have read "non-magnetic steel shaft." This explanation will make the note clear to those readers who have been wondering what a steering shaft was doing inside a magneto, even one of the polar inductor type.

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WE learn from Messrs. Rolls-Royce, Ltd., that Mr. A. F. Sidgreaves has recently joined the staff as Export Manager.

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ON July 16, H.R.H. the Duke of York, as President of the Industrial Workers' Union, accompanied by Major Greig, paid a visit to the works of the Sopwith Aviation and Engineering Co., Ltd., at Kingston-on-Thames, where he inspected the manufacture of aeroplanes and also of the A.B.C. motor cycles. The Duke spent a considerable time in the various shops, under the guidance of the Chairman, Mr. T. O. M. Sopwith, C.B.E., and the directors, and expressed himself as particularly pleased with the means which had been taken to ensure the welfare of the workers. At the Duke's request several shop-stewards and women workers were presented to him. He afterwards inspected the men's and boys' club rooms in which the Sopwith employé is provided with all possible means of recreation.

A Debtor's Aeroplane Trip

FOLLOWING on the publication in the *London Gazette* of July 16 of a receiving order in bankruptcy against Mr. John de Lysle, described as a manufacturer's agent and director of companies, of 47 and 48, Berners Street, W., comes a remarkable story. Some days earlier a petition had been filed against him, and as the result of official inquiries suspicions were aroused. The police were instructed to keep a watch at ports of embarkation, and it is reported that a warrant was issued by the Bankruptcy Court for the arrest of Mr. de Lysle, for certain alleged offences under the Bankruptcy Acts. Steps were taken to effect the arrest on July 15, but it has now been ascertained that Mr. de Lysle left the country in an aeroplane on the previous day. On his representation that he had urgent business in Paris, a special machine was placed at his disposal at the Croydon Aerodrome, and he made the journey by air, on July 14, arriving in Paris the same evening.

A Case at Bow Street

AT Bow Street Police Court on Tuesday before Sir Charles Biron, Mr. G. P. Olley, of Messrs. Handley Page and Co., Cricklewood, was summoned under the Air Navigation Regulations for flying over London, and in particular the Bermondsey district, on March 31 in an Avro aeroplane, of which he was pilot, at an altitude which did not enable the aircraft to land outside London by means of propulsion, the engine having failed through a mechanical breakdown. There was also a summons for flying over London at a low altitude dangerous to the public safety. Mr. F. L. Wells, managing director of Aero Films, Ltd., was also summoned for aiding and abetting Mr. Olley.

The prosecution was at the instance of the Commissioner of Police, but when the cases were called on it was reported that no parties were in attendance. The magistrate accordingly marked the register, "No parties."

PUBLICATIONS RECEIVED

Theorie des Hélices Propulsives Marines et Aériennes et des Avions en Vol Rectiligne. By A. Rateau. Paris: Gauthier-Villars et Cie., Quai des Grands-Augustins, 55. Price 20 fr.

Flying and Sport in East Africa. By Leo Walmsley. Edinburgh: Wm. Blackwood and Sons. Price 10*s.* 6*d.*

Report No. 80. *Stability of the Parachute and Helicopter.* National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Technical Note No. 6. *Static Testing and Proposed Standard Specifications.* By E. P. Warner, National Advisory Committee for Aeronautics, Navy Building, Washington, D.C., U.S.A.

Catalogue

A Record of Success: Palmer Landing Wheels and Tyres, Palmer Tyre, Ltd., 119–123, Shaftesbury Avenue, W.C. 2.

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